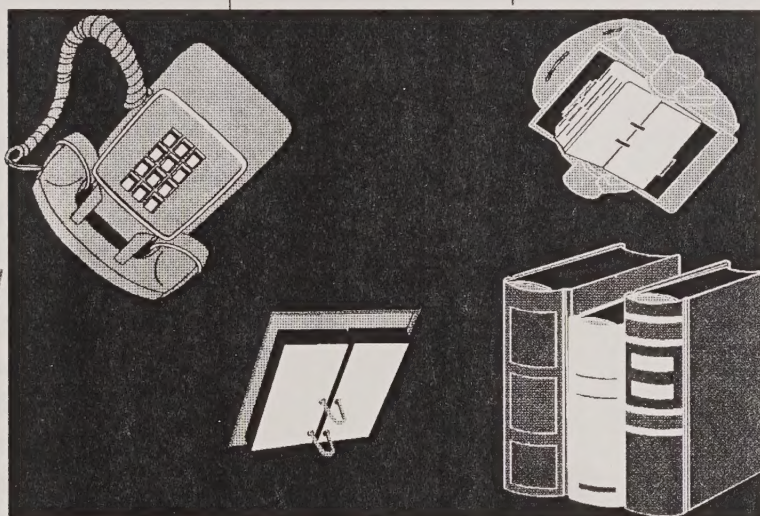
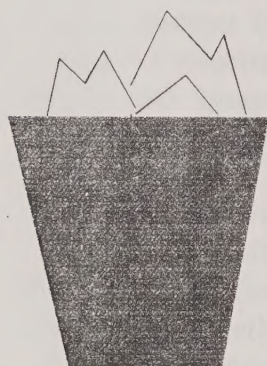
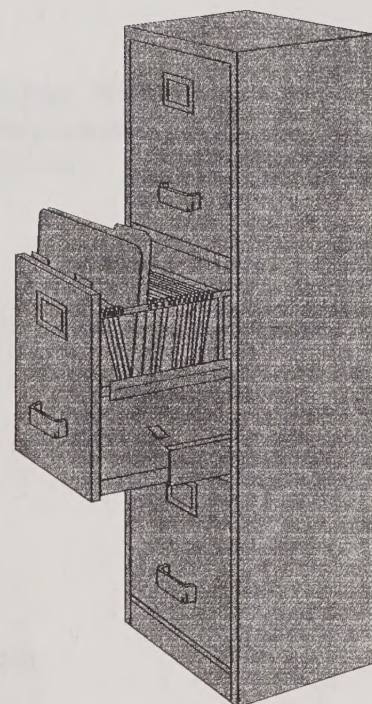
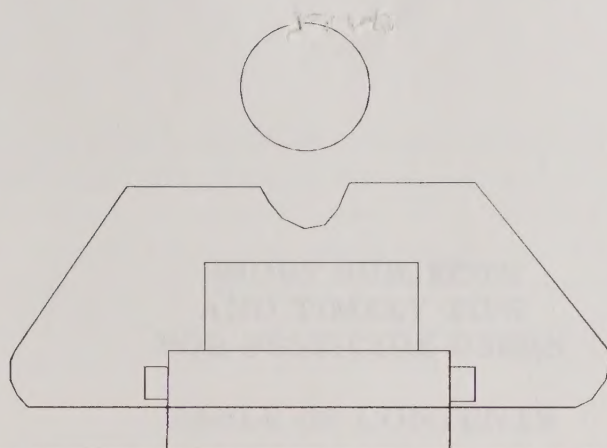
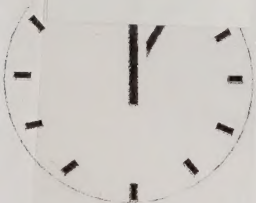


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# SHORT SUBJECTS AND TIMELY TIPS FOR PESTICIDE USERS 1995



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SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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WESTERN WEED MEETING

(From USDA Forest Service, Washington Office, 1360/4500 Memorandum To The Files dated September 13, 1995, *Western Weed Meeting Report, September 7-8*, by James L. Stewart, Director, Forest Insect and Disease Research and Bertha Gillam, Director, Range Management; and *Ecosystem Management News*, September 1995, Southwestern Region/Rocky Mountain Station EM IDT)

On September 7 and 8 a Western Weed Meeting was held. The meeting was organized by the U.S. Department of the Interior (USDI), USDA and several non-governmental groups interested in the invasive exotic weed problem. Bertha Gillam and Jim Stewart represented the Forest Service. Also attending the first day of the meeting was Dave Unger, Associate Chief.

"The first afternoon and the first part of the next morning were devoted to presentations describing the extent and seriousness of the problem. The consensus estimate of acres currently infested with exotic weeds is 17 million acres. If nothing is done to control this, one speaker, Rod Lym of North Dakota State University, believes that by the year 2010, the infestation will reach 140 million acres and will be increasing by 20 million acres per year. This extent of infestation will cause a 25



percent reduction in the wildlife and grazing resource, and severe changes in wetland and waterway vegetation. He stated that by the year 2010, weed management will be the largest single item in Federal land management agency budgets. Other speakers spoke to economic impacts on grazing, wildlife, and recreational values, while others on biodiversity and ecological effects. In summary all speakers supported the belief that invasive exotic weeds are an increasing serious problem that will cause economic hardship in many land-based economies, and will severely damage and even eliminate some native plant communities. The day culminated with a field trip to local weed problem areas, and research plots.

On the second day, USDI Deputy Secretary Garamendi spoke and announced that USDI bureaus will be mounting a major coordinated war on weeds. He invited the USDA and other Federal Departments/Agencies to join them. He even said he would not object to USDA taking the lead role, but wants us to at least be partners. He also spoke to the need for local involvement and the need for partnerships. He announced that USDI was creating a new position that will coordinate USDI weed management activities, and that USDI would be requesting budget increases for fighting the exotic weed problem.

Deputy Secretary Garamendi was followed by Governor Romer who echoed the seriousness of the problem and offered Colorado as a full cooperater in a major pilot program. He challenged the Federal Departments to come back to him with opportunities. He is also willing to work with other western Governors in an effort to elevate the issue on their agendas. He raised questions on how well education, extension and research were being coordinated. He stated that we need to measure the impacts of exotic weeds on resources and values and compare these with other natural disasters and with other resource problems so that we can place the weed issue in proper perspective.

The major part of the session on September 8 was a round table discussion aimed at identifying some action items that should receive follow-up action by the participating Federal Agencies. This session was an excellent discussion; some of the key items were:

We need to use the media more effectively to raise public awareness and understanding of the problem.

Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW) needs to play a more active role in coordinating Agency efforts including inventory."

"Mike Dombeck stated that he will be raising the specter of this issue within Bureau of Land Management (BLM) and will charge each of his State directors to develop pilot proposals.

It was decided to accept Governor Romer's offer to develop a pilot effort in Colorado and pursue opportunities in other States. Bertha Gillam stated that the Forest Service would support this.

Bud Rumburg, with the Society of Range Management, stated that his society would be willing to convene or facilitate a session consisting of a broader gathering of interested parties to pursue questions of how the wide array of organizational resources can best be utilized on this issue.

John Garamendi, in his closing remarks, made a big pitch for research, including the need for increased research budgets. He said we cannot get where we need to with current technology. He also stated that every USDI bureau would be charged with developing a more aggressive weed program. He stated that he will be meeting with Deputy Secretary Rominger, an old friend,



to encourage USDA to be a full partner. He also stated that Agency heads and Departmental officials should monitor FICMNEW activities and encourage its members to be aggressive in their coordination role.

The meeting was tremendously successful in increasing the awareness of the issue and raising the concern of those present. We commend the Department of Interior for taking a real leadership role based on the recognition that the exotic weed problem is a serious threat to our natural resources. We must raise the concern of public and private land managers to the point where they support a much more aggressive program for dealing with the problem."

(Washington Office Note: FPM is represented on the Federal Interagency Committee in Management of Noxious and Exotic Weeds (FICMNEW). The FPM representative is Dave Thomas.

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## **INERT INGREDIENT UPDATE FOR ROUNDUP AND GARLON 4 HERBICIDES**

### ***ROUNDUP***

Martin D. Lemon, Environmental Operations Manager, Monsanto, recently provided the Forest Service with a letter documenting some new, positive information regarding the inert ingredients in the Roundup herbicide formulation.

EPA has categorized the Polyethoxylated (POEA) tallow amine surfactant used in Roundup herbicide as a List 4 inert ingredient. Previously, this inert ingredient had been a List 3 ingredient. Monsanto has also set a quality standard for the trace level of 1,4-dioxane in the POEA tallow amine surfactant at "not more than 1 ppm." Because the surfactant comprises only a small portion of the Roundup herbicide formulation (7.5%), the concentration of 1,4-dioxane in the formulate product will be much lower than 1 ppm. Based on this quality standard, the current concentration of 1,4-dioxane in Roundup is over 300 times lower than the concentration used in the R-5 risk assessment of this impurity (Borrecco and Neisess 1991). The R-5 risk assessment had shown that the addition of the impurity did not substantially increase the risk to human health or to fish and wildlife resources over the risk identified for the active ingredient glyphosate. This letter documents recent claims that 1,4-dioxane had been effectively removed from the Roundup formulation.

### ***GARLON 4***

In earlier versions of the MSDS for Garlon 4 Herbicide, the chemical 2-butoxyethanol (also know as ethylene glycol monobutyl ether or EGBE) was listed as an inert ingredient. Because this chemical is listed on EPA's Inert Ingredient List 2, Region 5 corresponded with DowElanco in an effort to gather information for conducting a risk analysis in accordance with Forest Service policy on inert ingredients. In February, 1990, DowElanco provided the Forest Service with information on EGBE in the Garlon 4 formulation including information that this chemical was an impurity. A risk assessment was completed and published on February 25, 1991 by the Region (Borrecco and Neisess 1991).



Recently, Dr. Jack Edmondson, Product Development Manager, DowElanco, provided the Forest Service with a letter documenting that EGBE is an impurity:

"The active ingredient in Garlon 4, triclopyr butoxyethyl ester, is produced by reacting triclopyr ethyl ester with 2-butoxyethanol. As a result of that process step, small quantities of 2-butoxyethanol may not totally react and may be carried with the triclopyr butoxyethyl ester to the final Garlon 4 formulation as an impurity. The amount of 2-butoxyethanol that exists in the final formulation is quantified for each lot that is manufactured and is always less than 1% in the final formulation. This compound exists only as an impurity and should in no way be considered as an intentionally added inert ingredient."

DowElanco also provided a copy of the most recent MSDS for Garlon 4 printed 04/07/93. EGBE is no longer listed as an inert ingredient.

(Reference: Borrecco, J.E. and J. Neisess. 1991. Risk assessment for the impurities 2-butoxyethanol and 1,4-dioxane found in Garlon 4 and Roundup herbicide formulations. Report No. R91-2. USDA Forest Service, Pacific Southwest Region, State and Private Forestry, Forest Pest Management, San Francisco, CA, 33 pp.)

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### SYNCHRO SPRAY SYSTEM INTRODUCED

Harold Thistle and Tony Jasumback of the Missoula Technology & Development Center (MTDC) travelled to Hiawatha, KS to attend the system introduction of the SYNCHRO Spray System. This was held at RHS, Inc. in Hiawatha and was attended by over 50 attendees. In attendance were personnel from EPA, universities, agriculture and private industry. The day began with a series of detailed discussions of the technology itself. It was developed and patented at UC-Davis, subsequently licensed to CAPSTAN, Inc. and incorporated into an operational spray system by RHS, Inc. The first speaker was Dr. Ken Giles, University of California-Davis, who explained the system theory. He was followed by Kent Funk of RHS, Inc. who gave the details of the operational system design. The session was moderated by Graeme Henderson of CAPSTAN who has been the driving force in getting this technology implemented operationally. In the afternoon, the system was demonstrated in the field on a tractor pulled ground sprayer. The sessions then moved back inside for a roundtable discussion.

The novelty of this system is that it allows independent control of flow rate and pressure (drop size distribution). In the past, flow rate and pressure (drop size) were always codependent. If the pressure was increased, the application rate would increase and the droplet size would decrease. These relationships are dictated by the basic physics and were considered inflexible. Through the use of an actuator which opens and closes individual nozzles at high frequency, the codependence of these two variables is lessened. This would allow, for instance, an applicator to speed up his sprayer, maintain the same areal application rate but not increase the percentage of fine drops that are the major components of drift. Many new possibilities arise from this technology with regard



to drift mitigation. The system was coupled with a Trimble Differential Global Positioning System (DGPS) unit during the demonstration so that the system adjustments were made automatically based on position in the field.

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### **SELECTIVE, NON-TOXIC AZATIN EC LABELED FOR GREENHOUSE INSECTS**

(From *California-Arizona Farm Press*, August 19, 1995, p. 12)

"California greenhouse growers have an effective new product to control their most destructive insect pests.

The California Department of Pesticide Regulation has posted Azatin EC, an insect growth regulator, for registration. Azatin controls a broad spectrum of devastating insects, including whiteflies, fungus gnats and aphids, in the larval and pupal stages. It can be used on both food and non-food crops.

'We expect Azatin to be a perfect fit in the California greenhouse market,' says Greg Johnson, director of marketing for AgriDyne Technologies, Inc. 'Besides the excellent insect control it provides, Azatin will help growers meet the state's stringent environmental and worker safety regulations. Azatin is highly specific, non-toxic to mammals and non-phytotoxic to plants. Plus, it has a 12-hour re-entry interval.'

Azatin interferes with the key molting hormone, ecdysone, to prevent larval insects from molting from one life stage to the next. The active ingredient, azadirachtin, controls insects in all larval stages, as well as the pupal stage. It also exhibits antifeedant activity on larvae and adults.

Azatin is at the cutting edge of insecticide technology, says entomologist Ron Oetting who has worked with the product at the University of Georgia.

'It's very difficult to find a single compound that will take care of the whole management program,' Oetting says. 'We need some materials for immature insects and other materials for adults.'

'There has been a move away from old compounds that had a very broad spectrum. Instead, there will be a major push to go with materials such as Azatin that are selective and non-toxic to natural enemies.'

Azatin can be applied through high- or low-volume sprayers, as a drench or through irrigation."



## INSECT BORERS - A NEW REFERENCE

*Guide to Insect Borers of North American Broadleaf Trees and Shrubs* by J.D. Solomon. (For a complete reference see Publications this newsletter)

"This book is an illustrated guide to 300 species of insect borers that attack hardwood trees, shrubs, and other woody angiosperms in North America. The major purposes of this guide are to identify insect borers and their damage and to provide information for controlling them. Readers most likely to find this guide useful are practicing foresters, entomologists, and others responsible for preventing or minimizing losses caused by these insects in forests, plantations, nurseries, urban plantings, and other settings where trees and shrubs grow. This book should also be a useful reference for extension agents, pest control specialists, arboriculturists, horticulturists, nursery managers, urban managers, forestry technicians, forest owners, homeowners, and teachers and students of forestry and entomology." (J.D. Solomon)

## MYCOGEN, CIBA UNIT GET U.S. APPROVAL TO SELL GENETICALLY MODIFIED CORN SEED

By Rhonda L. Rundle

(Excerpt from *The Wall Street Journal*, August 10, 1995, p. B6)

"Mycogen Corp. and Ciba Seeds, a division of Switzerland's **Ciba-Geigy** Ltd., separately received U.S. government approval to sell the first corn seed to be genetically engineered for pest resistance.

The corn has been modified to produce a protein that kills the European corn borer, a worm-like insect that causes as much as \$1 billion in annual crop damage in Nebraska, Iowa and other parts of the U.S. Farm Belt.

The Environmental Protection Agency approval for transgenic corn brings biotech to one of America's biggest crops, based on revenue and acreage. Only a handful of other transgenic crops, notably tomatoes and potatoes, have been commercialized so far, but many other modified agricultural products are already being grown in small, experimental plots."

"Approval of Bt crops is opposed by some scientists and organic farmers who fear that widespread exposure to the protein will allow insects to develop resistance to it. 'With Bt being used on many more acres and in higher amounts continuously, insects are more likely to develop resistance rapidly as they have to many conventional pesticides,' said Jane Rissler, a senior scientist at the Union of Concerned Scientists in Washington. She said she was 'disappointed' by the approval, but pleased that the EPA's action included some monitoring and resistance-management requirements."

"Genetically modified corn will be used at first as feed for pigs, cattle, and other livestock because the initial EPA approval doesn't cover sweet corn, usually served on the American dinner table. But some Bt corn is likely to find its way quickly into the human diet through products such as fructose used to sweeten soft drinks. The Bt gene poisons only insects and is harmless to humans and animals."



## THE DYING OF TREES - A SURVEY OF FORESTS ACROSS AMERICA

(From *Science News*, Vol. 148, September 9, 1995)

“**The Dying of the Trees:** The Pandemic in America’s Forests—Charles E. Little. Eloquent and carefully written, this book surveys the health of the forests across America. Little finds that all is not well and that trees from one coast to the other are succumbing to the havoc wrecked by humans. From specific extinctions—such as the Ponderosa pine in California and the Eastern dogwood—Little explains what plagues these species: acid rain, clear cutting, fire suppression, and the increase in gypsy moths due to changing forest composition. Through hundreds of interviews with scientists, government officials, and citizens, he details how these problems are being addressed and what we can expect if this decline in forests continues. Viking, 1995, 275 p., hardcover, \$22.95.”

## ATMOSPHERIC METHYL BROMIDE (CH<sub>3</sub>Br) FROM AGRICULTURAL SOIL FUMIGATIONS

By K. Yagi, J. Williams, N.-Y. Yang, R.J. Cicerone

(From *Science*, Vol. 267, pp. 1979-1981, March 31, 1995)

### Abstract

“The treatment of agricultural soils with CH<sub>3</sub>Br (MeBr) has been suggested to be a significant source of atmospheric MeBr which is involved in stratospheric ozone loss. A field fumigation experiment showed that, after 7 days, 34 percent of the applied MeBr had escaped into the atmosphere. The remaining 66 percent should have caused an increase in bromide in the soil; soil bromide increased by an amount equal to 70 percent of the applied MeBr, consistent with the flux measurements to within 4 percent. Comparison with an earlier experiment in which the escape of MeBr to the atmosphere was greater showed that higher soil pH, organic content and soil moisture, and deeper, more uniform injection of MeBr may in combination reduce the escape of MeBr.”

For a copy of the paper -

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## YELLOW JACKETS

(From *Pest Management Bulletin*, Vol. 16, No. 4, September 1995, U.S. Army Center for Health Promotion and Preventive Medicine (Provisional), Aberdeen Proving Ground, MD)

“Most people know and fear the yellow and black striped yellow jacket wasps that are common, uninvited guests to late summer picnics. Their stings are painful and for those people allergic to insect venom, they are dangerous. Many people confuse bees, which are fuzzy and only feed on flower nectar, with wasps, which have shiny bodies and are predators. What most people don’t realize is that yellow jackets capture enormous numbers of flies, caterpillars and other insects to feed their young. They have been seen bringing in more than 225 flies an hour to a single nest; one

study found that over a three day period, just two wasps collected 20 grams of imported cabbage worms. It is usually only in late summer, when their populations are at their peak and wasps are attracted to plants with ripening fruit or aphid honeydew deposits on the leaves that most conflicts arise between humans and yellow jackets. Although they are touchy defenders of their nests, most stings are a result of accidentally trapping or pinching a wasp.

Between 0.4 and 0.8 percent of humans are allergic to soil wasp and bee venom. Nearly 80 percent of all serious venom-related deaths occur within one hour of the sting. If symptoms are more serious than localized swelling, reddening and pain or mild headache and fever, a physician should be consulted. Multiple stings are especially dangerous. Some people may develop sensitivity to venom after repeated stinging episodes over a short or long period of time.

You can avoid being stung by following a few rules:

Remove all outdoor food sources attractive to wasps. Feed pets indoors and keep garbage cans tightly covered and wash cans regularly to remove spilled food. Bury fallen fruit and table scraps deep in compost piles and don't compost meat scraps or bones.

Watch where you sit or step (don't go barefoot!). Be especially careful to look before reaching into berry bushes or picking fruit. Thirsty wasps are attracted to moisture so be cautious when sitting on or handling wet beach towels.

Never swat at a yellow jacket hovering around you—it is a good way to get stung. Instead, quietly move away or let the wasp leave of her own accord. The only exception to this is if you have accidentally disturbed a nest and hear wild buzzing. In this case protect your face with your hands and RUN!

Pick fruit in the early morning or evening while it is cool and most wasps are still in their nests."

For a complete copy of the article -

CONTACT: PAT SKYLER (CA)

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## **CONTINUING EDUCATION - CRITICAL TO JOB SUCCESS**

(Excerpts from article in *USA Today*, September 13, 1995, by Dennis Kelly)

"Americans now consider education a lifelong process critical to helping them get ahead in their jobs, but U.S. colleges still aren't ready to take advantage of that expanding market, a new survey says.

Don Dillman, lead researcher for the Washington State University study, says the survey of 1,124 adults found 81% saying 'additional education is important for me to be successful on the job' and that 80% had received job-related training the past three years.

'The thing we found most striking is that they said getting educated once is not enough,' he says."



"Value placed on additional education doesn't vary with income. Those with incomes under \$20,000 are just as likely to value education and training as those with household incomes \$60,000 and above.

But 93% of those making \$60,000 or more say they have been given work-related training the last three years vs. 72% who earn \$20,000 or less.

Those who already have good educations are more likely to get work-related training - 98% of those with a master's compared with 73% of those with a high-school degree.

Dillman says the survey found various ways that people had obtained their extended educations: 55% had taken a short-course seminar; 43% took a non-credit college course; 33% studied using videotapes at home.

Adults say the barriers blocking their paths to further education include cost (56%); being too busy (54%); and classes offered at inconvenient times (42%) or at inconvenient locations (42%)."

"In many ways, it (the study) is a wake-up call for traditional higher education,' Smith says, 'saying that if you continue to do what you've been doing the last 100 years, you're not going to be serving the major needs of the American public. You must be prepared to change.[']"

#### FOREST INSECT MANAGEMENT COURSE - FEBRUARY 1996

The Forest Insect Management Course is scheduled for February 1996 in Sault Ste Marie, Ontario, Canada. This course is designed to advance the skills and knowledge of forestry professionals in current techniques and principles for planning, implementing and evaluating Forest Insect Management programs, not simply as tactical control programs, but in reference to the broader scope of Integrated Resource Management (IRM). Course instructors from across North America with world class technical reputations and superior communication skills will be facilitating a 10-day learning experience through lectures, field trips, practical field exercises and discussion groups.

This course is a cooperative Ontario Ministry of Natural Resources, Canadian Forest Service, Canadian Institute of Forestry venture. Upon completion of the Course, participants will be knowledgeable in: the essentials of entomology and principles of forest insect management; insect population surveys and damage appraisals and impacts; insect management tactics and strategies; insecticide application technology; forest insect management efficacy and impact from a biological and economic perspective; and current advances and trends in organizing an insect pest management program.

For more details on this course, contact:

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Fax: (705) 759-5728  
E-Mail: eharvey@pmoeafpm.fpmi.forestry.ca



## UPCOMING EVENTS

8-11 October 1995. Society for Vector Ecology Annual Conference, Holiday Inn University Park, Fort Collins, CO. Contact: Society for Vector Ecology, PO Box 87, Santa Ana, CA 92702, (714) 971-2421, Fax (714) 971-3940.

5-8 November 1995. Seventh Eastern Wildlife Damage Management Conference, Holiday Inn North, Jackson, MS. Contact: Dean Steward (601) 325-3177 or Phil Mastrangelo (601) 325-3014.

6-10 November 1995. 16th Annual Meeting Society of Environmental Toxicology and Chemistry (SETAC), Vancouver, BC. Contact SETAC (904) 469-1500.

17-21 December 1995. Entomological Society of America Annual Meeting, Las Vegas Hilton, Las Vegas, NV. Contact: ESA, 9301 Annapolis Road, Lanham, MD, (301) 731-4535, Fax (301) 731-4538.

21-26 January 1996. IX International Symposium on Biological Control of Weeds. South Africa. Contact: J.H. Hoffmann, Zoology Department, University of Cape Town, Rondebosch 7700, South Africa. hoff@botzoo.uct.ac.za

4-7 March 1996. 17th Vertebrate Pest Conference. Sonoma County Red Lion Hotel, Rohnert Park, CA (about 50 miles north of San Francisco). Contact: John E. Borrecco at (415) 705-2873 for additional information.

13-18 July 1996. International Summer Meeting American Society of Agricultural Engineers (ASAE), Phoenix, AZ. Contact ASAE (616) 429-0300.

17-18 July 1996. National Spray Model and Application Technology Steering Committee Meeting, Phoenix, AZ. Contact Jack Barry (916) 757-8342.

## CALL FOR ARTICLES

Please forward to me by the 13th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of Short Subjects and Timely Tips. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

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## PUBLICATIONS, REPORTS, AND PRESENTATIONS

Mierzejewski, K., W. Buzzard, and G. Laudermilch. 1995. An evaluation of the Satloc Foreststar in the 1995 Pennsylvania forest insect pest suppression program. AATL 95-2. Aerial Application Technology Laboratory, Department of Entomology, Pennsylvania State University, University Park, PA.

Solomon, J.D. 1995. Guide to insect borers of North American broadleaf trees and shrubs. Agri. Handbk. 706. Washington, DC: U.S. Department of Agriculture, Forest Service. 735 pp.

Teske, M.E. 1995. Combine - A software program which generates multiple flight line results from a single flight line (developed for use in conjunction with the Forest Service-Cramer-Barry-Grim (FSCBG) spray dispersion model). FPM 95-20. Prepared under Contract No. 53-0343-1-00153 by Continuum Dynamics, Inc. for USDA Forest Service, Forest Health Technology Enterprise Team, Davis, CA.

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The Washington Office, Forest Health Protection, Forest Health Technology Enterprise Team and the Pesticide-Use Management and Coordination Group co-sponsors and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.





SHORT SUBJECTS  
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FOREST SERVICE MEETS IR-4

USDA Interregional Project #4 (a.k.a. IR-4) has been helping the producers of minor crops (yes, forests are a minor crop!) obtain registrations for the conventional pesticides they need to grow food and ornamental crops. Previously, IR-4 has emphasized pesticides for minor food crops. However, the new IR-4 strategic plan expands its role to support registration of biorational pesticides for all minor crops, including forestry. WO-Forest Health Protection (WO-FHP) staff saw an opportunity to revisit IR-4, and explore possibilities for collaboration in light of this new emphasis.



WO-FHP Director Ann Bartuska and staff met with IR-4 on August 9, 1995. Representing the IR-4 project were its Director, Dr. Richard Guest, and the Coordinator of Biologicals, Dr. Christina Hartman. We presented information on pesticide use in forest management, and Forest Service research and development efforts in biopesticides. Drs. Guest and Hartman explained the past and future programs of IR-4. Biopesticide division funding is increasing for studies of field application efficacy, and some limited toxicological testing. In addition IR-4 maintains a network of Good Lab Practice qualified laboratories that conduct studies directly in support of Experimental Use Permits and full registrations of biopesticides.

We invited IR-4 staff to visit the Morgantown Center of the Forest Health Technology Enterprise Team this fall. Furthermore, we agreed to identify specific studies needed to support Forest Service efforts to develop biopesticides. WO-FHP will be contacting key program leaders to develop study proposals in the coming months.

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(202) 205-1611

### USDA IR-4/EPA MINOR USE BIOPESTICIDE WORKSHOP

As the Forest Service explores collaborative development of biopesticides with IR-4, what could be more timely than a workshop on...Minor Use Biopesticides! IR-4 recommends attendance for: "Private and public sector registrants and prospective registrants of biopesticide products who require up-to-date information on federal regulatory procedures, the availability of research and registration assistance from the USDA/state partnership IR-4 program, and the transfer of biopesticide use technology to producers of minor crops."

The workshop will be held on November 7-8, 1995 at the Marriott Metro Center, Washington, DC. For details and registration form -

Contact: GARY K. SMITH (DC)

(202) 205-1611

DAVE THOMAS (DC)

(202) 205-0889

CHRISTINA HARTMAN (NJ)

(908) 932-9575

### PHYTOREMEDIATION

Removal of toxins from soil by plants is the subject of Jerry E. Bishop's article in the *Wall Street Journal* (August 7, 1995) titled "Pollution Fighters Hope a Humble Weed Will Help Reclaim Contaminated Soil." Over the past several months there have been several articles in newspapers and magazines about microorganisms being used or evaluated as agents to clean the environment of toxins. There was even an article about use of a microorganism that releases gold from its rock matrix. Bishop's article reviews field research by Phytotech, Monmouth Junction, NJ, a company that is using plants to leach heavy metals from soil.





“The little two-year-old company is attempting to exploit a technology called phytoremediation, ‘phyto’ being from the Greek word for plant. The technology and its name were conceived by a Russian-born, U.S.-educated plant biologist, Ilya Raskin, at Rutgers University in New Brunswick, NJ.

Dr. Raskin, who came to the U.S. in 1976, recalls that in 1989, when he moved to Rutgers from DuPont Co., he encountered scientists with a Lawrenceville, NJ, start-up biotech company, Envirogen Inc. They were using bacteria and other micro-organisms to clean up polluted soil. While bacteria are good at degrading oils and chemicals, ‘they can’t degrade heavy metals,’ Dr. Raskin says. But ‘a lot of contaminated sites contain mixtures’ of hydrocarbons and heavy metals.”

“The idea that such specialized plants might be used to deliberately remove metals from soil wasn’t new. But most research had involved wild plants that had managed to thrive on metal-soaked soils.”

“‘We screened hundreds of plants,’ Dr. Raskin recalls. The *Brassicaceae* family of herbs that includes mustard, broccoli, cabbage and rape showed some promise, however. Finally, the search narrowed down to the Indian mustard plant, *Brassica juncea*, grown throughout the world for its oilseed (and only to a small extent for making the condiment).

Greenhouse experiments showed that after two to three weeks of growth, the Indian mustard soaked up twice as much lead in its shoots as the tobacco plant and 50 times as much as the corn plant.

But not all strains were equally adept at grabbing metals from the soil. Screening more than 100 Indian-mustard strains finally led to one that is particularly good at leaching out not only lead but cadmium, chromium, nickel, zinc and copper.

The experiments indicated that one planting of mustard could soak up as much as two metric tons of lead per hectare (2.5 acres), or six tons a year if three plantings could be squeezed in.”

“Phytotech, meanwhile, is leaping at every chance it can get to test phytoremediation in the field, usually free of charge or at nominal cost. That is why it is growing a plot of Indian mustard within half a mile of the Chernobyl atomic reactor disaster. In England, a test plot of mustard is extracting cadmium from tailings of a lead mine dating back to Roman times.”

Do you have toxic sites on your forest?

For a complete copy of the article -

CONTACT: JACK BARRY (CA)

(916) 757-8342





## SPORAX (BORAX) AVAILABILITY

Sporax (granular borax for annosus root disease control) is available for purchase in 50 lb sacks at a cost of \$1.40 per pound from Wilbur-Ellis Company. Sporax is registered in CA, OR, WA, MT, and ID. Wilbur-Ellis is willing to register Sporax in other states if there is a market that will support the cost of registration. Cost of the Sporax is based on Manteca, Redding, and Portland. Costs elsewhere would probably include additional shipping charges. Wilbur-Ellis Co. contacts for ordering Sporax are:

---

Scott Johnson, Wilbur-Ellis Co, 13771 S. Prescott Rd., Manteca, CA 95336. Phone number: (800) 982-4337. Mobile: (209) 471-4849. Scott covers an area from the Plumas National Forest south in California.

Jerry Gallagher, Wilbur-Ellis Co, 17380 Auction Yard Rd., Cottonwood, CA 96022. Phone number: (916) 527-4351. Mobile: (916) 520-4116. Jerry covers northern California including the Lassen, Modoc, Mendocino, Klamath, Shasta-Trinity, and Six Rivers National Forests.

The Wilbur-Ellis Portland phone number is (503) 227-3525. Kurt Spingath covers most of Oregon. Bruce Alber covers western Washington and the northern quarter (approx) of Oregon.

Wayne Stewart of WECO Spokane covers Montana and Idaho. Call Wayne at (800) 727-9186.

CONTACT: JOHN BORRECCO (CA)

(415) 705-2873

## REGULATION OF SEMIOCHEMICALS - GLOBAL ASPECTS

Lain Weatherston and Albert K. Minks published the above titled article in the recent 1995 issue of *Integrated Pest Management Reviews* (Vol. 1-1:1-13). This paper discusses the issue of registering semiochemicals and provides background and information on pheromone use and regulation. Status of registering is summarized for most of the industrial countries. Under the United States it states that in 1993 there were "registrations for materials to control six insect and one mite species (fly scatterbaits containing muscalure are not included) however, several years ago there were six more registered pheromone products." Dr. Weatherston can be contacted at Mallinckrodt Veterinary, Inc., 421 East Hawley St., Mundelein, IL 60060.

## INTEGRATED PEST MANAGEMENT REVIEWS - A NEW JOURNAL

Volume 1, Number 1 (March 1995) was the premier issue of this new journal. *Integrated Pest Management Reviews* publishes review papers on all aspects of pest management. It covers chemical





control, host resistance, cultural control, biological control, socio-economics, implementation and extension. The journal also surveys a broad range of systems including forestry, agriculture, horticulture, veterinary, medical and domestic systems. "Pests" is taken to mean insects, pathogens, nematodes, molluscs, weeds, mammals and birds. *Integrated Pest Management Reviews* aims to: draw together information from a broad range of disciplines and systems, publish the latest developments in IPM in a concise and stimulating review format, publish the results of major IPM research programmes in their entirety, keep readers informed of new chemicals and pest control products in informative and unbiased reviews.

Regional (US) Editor is: Marcos Kogan, Integrated Plant Protection Center, Oregon State University, Cordley Hall, Corvallis, OR 97331-2915 - (503) 737-3541 or (503) 737-3080.

For a sample copy contact: USA/Canada, Nancy Fogarty, Journals Promotion Department, Chapman & Hall Inc., 115 Fifth Avenue, New York, NY 10003 - (212) 244-3336, Fax (212) 563-2269.

### THINNING BIG SAGEBRUSH

A brochure that addresses thinning big sagebrush with Spike 20P for improving wildlife habitat has recently been made available. It addresses such subjects as research results done by the University of Wyoming, biodiversity, grass and forb response, and tebuthiuron mode of action. If anyone would like a copy of this brochure or other information on thinning sagebrush please contact Garth Baxter, 1130 East 1675 North, Ogden UT 84414.

CONTACT: GARTH BAXTER (UT)

(801) 782-6884

### REPORT ON INERT INGREDIENTS IN PESTICIDES

The issue of inert ingredients in pesticides is contentious even with some of the safer pesticides used in many spray projects. In preparing the human health risk assessment for the new gypsy moth EIS which is due out in final form later this year, the EIS team found that a clear and concise presentation of how inert ingredients are regulated by EPA was lacking. Syracuse Environmental Research Associates, Inc. (SERA) of Fayetteville, NY, the contractor that prepared the gypsy moth human health risk assessment, was asked to research the issues of inert ingredients. The result was a draft report which presents background information on how inert ingredients are regulated and categorized, and proposes several approaches for dealing with them in risk assessments. The report may serve as a primer for resource managers and provide a useful reference source on inert ingredients for preparation of EA's. For more information -

CONTACT: NOEL SCHNEEBERGER (PA)

(610) 975-4121





## IT'S IN THE NEWS

(From *Pest Management Bulletin*, Vol. 16, No. 3, June 1995 - United States Army Center for Health Promotion and Preventive Medicine (Provisional), Aberdeen Proving Ground, MD)

"A newly released study published by the American Chemical Society suggests that people who complain of headaches, drowsiness, and eye, nose, and throat irritations due to exposure of indoor insecticides in particular, may be responding to the volatile organic compounds (VOC) used as inert ingredients and not to the insecticide's active ingredient. Indoor pesticides typically contain no more than 3 percent active ingredient and as much as 99.5 percent water and inert ingredients.

High VOC levels may exist for at least several hours following unventilated spray applications, and for the better part of a day following fogger applications. VOC levels have been found to be highest for foggers and lowest for emulsifiable concentrate sprays. The study determined that many general health complaints that may be attributed to indoor insecticide exposure are also consistent with exposure to the inert ingredient VOC's. The reason there is much greater potential for acute airborne exposure to VOC's in insecticides is because they have vapor pressures that are much higher than those of active ingredients." (*Chemically Speaking*, May 1995, University of Florida)

## TECHNOLOGY & DEVELOPMENT NEWSLETTER

The newsletter *Technology & Development News* (news for land managers from the T&D Program) is a publication of the Missoula Technology & Development Center, Missoula, MT. If you are interested in being on the mailing list for this newsletter, send your name and address to: Distribution, Missoula Technology & Development Center, Building #1, Ft. Missoula, Missoula, MT 59801.

CONTACT: BILL KILROY (MT)

(406) 329-3925

## NPTN ENHANCES SERVICE OFFERINGS

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 6, June 1995 - Cooperative Extension Service, Utah State University)

"The National Pesticide Telecommunications Network (NPTN) is a cooperative effort with the U.S. Environmental Protection Agency. Its role is to deliver objective, science-based information on pesticide-related issues to several groups including the medical, veterinary, professional communities and the general public. The Network provides services in many different areas like pesticide product information, pesticide poisoning recognition/management, toxicology and symptomatic reviews, health and environmental effects and clean-up/disposal procedures.





The NPTN's new hours of operation are 6:30 a.m. - 4:30 p.m. (Pacific Time) Monday through Friday. General public telephone number: 1-800-858-7378, medical profession/government agencies: 1-800-858-7377. (NPTN,6/95)"

CONTACT: HOWARD M. DEER (UT)

(801) 797-1600

## **HERBICIDE-RESISTANT CROPS MOVE CLOSER TO MARKET**

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 6, June 1995 - Cooperative Extension Service, Utah State University)

"The Environmental Protection Agency has removed the last major barrier to the employment of herbicide-resistant crops by approving use of two herbicides on such plants. The approvals make possible the first commercialization of herbicide-resistant plants - products of generic engineering touted since the early days of biotechnology. In allowing use of the herbicides on these crops, EPA says the products pose no acute or chronic dietary concerns.

The first treatment approved was bromoxynil, a broadleaf herbicide made by Rhone-Poulenc Inc. and sold as Buctril, which was cleared for use on bioengineered cotton varieties. The cotton seeds are modified with a bacterial gene, called the BXN gene, that detoxifies bromoxynil. Calgene, of Davis, California, developed the resistant cotton, which was approved last year by the Department of Agriculture.

Monsanto has received EPA clearance to use its herbicide glyphosate on an herbicide-resistant soybean strain it developed. Glyphosate, a nonselective herbicide sold as Roundup, is one of the most widely used pesticides in the world. Bioengineered to be glyphosate resistant, this 'Roundup Ready' soybean already was cleared by USDA and the Food & Drug Administration. (C&EN,6/5/95)"

CONTACT: HOWARD M. DEER (UT)

(801) 797-1600

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Upon completion of the course, participants will be knowledgeable in: vegetation management tactics, environmental impact evaluation methods, human health concerns, forest vegetation management / silviculture, evaluation of vegetation management options, and program management / conflict resolution.

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Upon completion of this course, participants will be knowledgeable in: the essentials of entomology and principles of forest insect management, insect population surveys and damage appraisals and impacts, insect management tactics and strategies, insecticide application technology, forest insect management efficacy and impact from a biological and economic perspective, and current advances and trends in organizing an insect pest management program.

Course instructors from across North America with world class technical reputations and superior communication skills will be facilitating the two courses through lectures, field trips, practical field exercises, and discussion groups.

Both courses are cooperative Ontario Ministry of Natural Resources, Canadian Forest Service, Canadian Institute of Forestry ventures.

For more details contact:

Eileen Harvey  
Canadian Forest Service  
Forest Pest Management Institute  
1219 Queen Street East  
Sault Ste Marie, Ontario  
Canada P6A 5M7

Phone: (705) 757-5740 ext. 2251

Fax: (705) 759-5728

E-Mail: [eharvey@pmoeafpm.fpmi.forestry.ca](mailto:eharvey@pmoeafpm.fpmi.forestry.ca)

## **MORE BOOKS - PEST MANAGEMENT AND NATURAL RESOURCES**

Call 1-800-994-8849 for the latest book catalogue from the University of California, Division of Agriculture and Natural Resources. The catalogue listing includes publications, slide sets and videos on forestry, natural resources, pest and disease management, crops, soil and water. Pesticide





coordinators will be especially interested in *The Safe and Effective Use of Pesticides* (\$30.00), companion slide set (\$249.05); *Residential, Industrial, and Institutional Pest Control* (\$25.00), companion slide set (\$170.00); *Weeds of the West* (\$25.00); and the previously mentioned book *Forest and Right-of-Way Pest Control* (\$30.00).

CONTACT: JACK BARRY (CA)

(916) 757-8342

## STATEMENT BY THE PRESIDENT ON ENDANGERED SPECIES AND CLEAN WATER ACT REFORMS

(The following is a July 12, 1995 press release issued by The White House, Office of the Press Secretary)

"I am pleased to announce significant reforms to the Endangered Species Act and Clean Water Act wetlands programs to benefit homeowners. Under these reforms, the vast majority of all American homeowners will never have to worry about endangered species or wetlands requirements.

Specifically, for Endangered Species Act programs, the Department of the Interior will essentially eliminate restrictions on single family homeowners with five or fewer acres of land. Similarly, for wetlands programs, the Army Corps of Engineers will issue a new nationwide permit to allow homeowners to construct or expand their residences without an individual permit. This will apply even if these activities involve filling as much as a half-acre of non-tidal wetland.

Finally, I have instructed the heads of each of the relevant departments and agencies to examine all of their programs to determine if there are other actions that they can take to benefit homeowners.

Home ownership and the opportunity for homeowners to use their property without unnecessary restrictions are an essential part of the American dream. We can provide homeowners greater freedom and still protect the environment. This is common sense, reasonable reform – not a reckless, destructive rollback of health and environmental safeguards, as others are proposing."

## EPA SIMPLIFIES PESTICIDE REGISTRATION PROCESS

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 8, August 1995 - Cooperative Extension Service, Utah State University)

"EPA has streamlined the pesticide registration process as part of President Clinton's environmental regulatory reform initiative. Effective May 31, this new process cuts in half, from 90 days to





45 days, EPA's review process for certain changes to pesticide registrations. Of the 5,000 pesticide registration amendments made annually, about 15% may now be reviewed using simplified procedures. For example, instead of waiting for EPA's approval before making changes, companies can now make changes in labeling or product composition by merely notifying EPA. These companies, however, must sign a statement certifying compliance with EPA regulations, especially those protecting public health. (C&EN, 6/12/95)"

CONTACT: HOWARD M. DEER (UT)

(801) 797-1600

### MONSANTO TO PURCHASE 49.9% OF CALGENE

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 8, August 1995 - Cooperative Extension Service, Utah State University)

"Monsanto has agreed to acquire a 49.9% stake in agricultural biotechnology company Calgene, of Davis, California. Monsanto will provide \$30 million in cash; certain research on fresh produce and oilseeds; and its interest in Gargiulo, a produce grower and shipper based in Naples, Florida. Calgene has been developing genetically engineered plants such as tomatoes, cotton, and canola. Monsanto has biotechnology-related projects in soybeans, cotton, potatoes, and other crops. The transaction is expected to be completed in the fourth quarter of this year. (C&EN, 7/3/95)"

(Editor's note: Calgene is located in Davis, CA just two doors east of the editor's office.)

CONTACT: HOWARD M. DEER (UT)

(801) 797-1600

### WHAT'S UP DOC?

(From *Pest Management Bulletin*, Vol. 16, No. 3, June 1995 - United States Army Center for Health Promotion and Preventive Medicine (Provisional), Aberdeen Proving Ground, MD)

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"Paragon Professional Pest Control Products, P.O. Box 17167, Memphis, TN 38187 has announced a product called Conquer® Residual Insecticide Concentrate. The active ingredient is 3.48% Es-fenvalerate. It is labeled for use in and around home and food and non-food areas of: schools, warehouses, office buildings, apartment buildings, theaters, hotels, motels, kennels, food processing plants, food service establishments, truck trailers, railroad cars, and food manufacturing and warehousing establishments as well as lawns for flea and tick control.



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Monsanto Co., 800 N. Lindberg Blvd, St. Louis, MO 63176 is now making Roundup® available in pre-measured packs. These pre-measured packs contain enough herbicide for one gallon of finished spray solution.

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If you would like additional information on these products, please call the DOD Pesticide Hotline, DSN 584-3773 or commercial (410) 671-3773.”

### UPCOMING EVENTS

8-11 October 1995. Society for Vector Ecology Annual Conference, Holiday Inn University Park, Fort Collins, CO. Contact: Society for Vector Ecology, PO Box 87, Santa Ana, CA 92702, (714) 971-2421, Fax (714) 971-3940.

5-8 November 1995. Seventh Eastern Wildlife Damage Management Conference, Holiday Inn North, Jackson, MS. Contact: Dean Steward (601) 325-3177 or Phil Mastrangelo (601) 325-3014.

17-21 December 1995. Entomological Society of America Annual Meeting, Las Vegas Hilton, Las Vegas, NV. Contact: ESA, 9301 Annapolis Road, Lanham, MD, (301) 731-4535, Fax (301) 731-4538.

21-26 January 1996. IX International Symposium on Biological Control of Weeds. South Africa. Contact: J.H. Hoffmann, Zoology Department, University of Cape Town, Rondebosch 7700, South Africa. hoff@botzoo.uct.ac.za

### CALL FOR ARTICLES

Please forward to me by the 15th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of Short Subjects and Timely Tips. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

CONTACT: PAT SKYLER (CA)

(916)757-8343

FAX (916)757-8383

DG: P.SKYLER:R05H

E-MAIL:

/s=p.skyler/ou1=r05h@mhs-fswa.attmail.com





## PUBLICATIONS, REPORTS, AND PRESENTATIONS

Anonymous. 1995. XXVIIth Eastern Canada pesticide residue and environmental contaminants workshop and symposium on environmental behaviour of pesticides - On site technical program & abstracts. Sault Ste. Marie, Ontario, Canada, 25-27 May.

Teske, M.E. 1995. *Bacillus thuringiensis* drift deposits on foliage and physical samplers - A summary of the Utah drift studies 1991-1993. FPM 95-18. Prepared by Continuum Dynamics, Inc. for USDA Forest Service, Forest Health Technology Enterprise Team, Davis, CA.

Teske, M.E., T. Curbishley, and A.Z. MacNichol. 1995. FSCBG version 4.35 one-on-one training notes. FPM 95-19. Prepared by Continuum Dynamics, Inc. for USDA Forest Service, Forest Health Technology Enterprise Team, Davis, CA.

Teske, M.E., A.E. Kaufman, C.W. George, B.S. Grim, and J.W. Barry. 1995. Field measurements of helicopter rotor wash in hover and forward flight. Paper to be presented at the American helicopter society aeromechanics specialist conference. Fairfield County, CT, 11-13 October.

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The Washington Office, Forest Health Protection, Forest Health Technology Enterprise Team and the Pesticide-Use Management and Coordination Group co-sponsors and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.





SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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PESTICIDE RISK ASSESSMENT CONTRACT AWARDED

Forest Health Protection, WO (FHP/WO) has announced that the new pesticide risk assessment contract has been awarded to Syracuse Environmental Research Associates (SERA). This is the same company that prepared the human health risk assessment for the gypsy moth environmental impact statement. As part of the WO re-organization, FHP/WO has an agreement with Animal and Plant Health Inspection Service (APHIS) to carry out the duties of Contracting Officer's Representative (COR) on behalf of FHP/WO. Leslie Rubin, APHIS, who also worked on the gypsy moth documents will be the COR. Each company was asked to prepare a sample work assignment for the product "Vanquish." To get started on the contract this fiscal year, SERA has been given the work order to proceed with this product. FHP/WO is preparing a letter that will describe the process for submitting future task orders from the Regions/Area. Our special thanks to USDA-APHIS for their cooperation. If you have questions or comments -

CONTACT: NANCY LORIMER (DC) (202) 205-1107

## MALATHION MAKERS CLEARED

(From *The Sacramento Bee Final*, July 18, 1995)

"SAN FRANCISCO - The state Supreme Court has ruled that the makers of malathion did not have to notify the public of alleged health hazards posed by government use of the chemical during a declared state of emergency.

In rejecting a suit against manufacturers by a 14-year-old boy who said he was blinded by malathion in 1990, the court it was the state's obligation to notify the public of any health dangers associated with the chemical, used to curb outbreaks of the Mediterranean fruit fly.

'A public emergency is not a time for uncoordinated, haphazard or antagonistic action,' Justice Armand Arabian said in the 6-1 ruling handed down Monday.

The possibility of damage suits for failure to act could prompt manufacturers 'to question the state's judgment during a declared emergency and, when in doubt, to challenge the state's response,' Arabian said. 'The result, of course, would be complete chaos.'

They work together at the Los Angeles branch of the court, which handles disciplinary matters involving lawyers. The suit was filed in Los Angeles Superior Court.

Anne Charles, A State Bar spokeswoman, said an investigation began after Oliver contacted the bar last month."

## DON'T COUNT ON JUICY FRUIT GUM FOR POCKET GOPHERS

While the use of Juicy Fruit gum continually crops up in the popular newspaper garden columns and talk shows, I know of no scientific data showing that it is effective in controlling pocket gophers. In fact, Rex Marsh of University of California - Davis, a widely recognized authority on pocket gophers and pocket gopher control, has tested Juicy Fruit and found no effect on pocket gophers (Marsh, R.E. 1987, "Don't Count on Juicy Fruit Gum for Gophers," *Pest Management* 6(11):14). The point is that the popular press is full of testimonial evidence and spurious solutions to animal damage problems. When these "methods" are subjected to scientific tests, they seldom prove effective.

More important is the fact that Juicy Fruit gum is not registered for control of pocket gophers (or for any other animal that I know of). The law is quite clear, a pesticide is "any substance, or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest ...." (See FIFRA Sec. 2u). To use Juicy Fruit gum in this manner requires the material to be registered for this use by EPA. To use or recommend the use of Juicy Fruit gum for control of

pocket gophers without the product being registered is a violation of both Federal and State laws. For a copy of the above published paper -

CONTACT: JOHN BORRECCO (CA)

(415) 705-2873

### **CANADIAN BOOK - FOREST INSECTS**

Edited by J.A. Armstrong and W.G.H. Ives, *Forest Insect Pests in Canada*, was published this year in Ottawa. This softcover book of 70 chapters and 732 pages covers the forest insect pests of Canada, pest management technology, application of technology and equipment, operational control programs, and strategies for the future. Forest entomologists will want a copy for their reference library. The book is a tribute to Jack Armstrong (1929-1991) for his professional dedication and achievements in forest entomology, and his determination to press forward with this book under severe physical handicaps. The book (Cat. no. Fo42-235/1995E) costs \$79.95 plus S&H and can be ordered from Canada Communication Group-Publishing, Ottawa, Ontario, Canada K1A 0S9, phone (819) 956-4800.

CONTACT: JACK BARRY (CA)

(916) 757-8342

### **FSCBG SUPPORTS REGISTRATION**

Dr. Bob Mickle, Environment Canada, reported that the Forest Service Cramer-Barry-Grim (FSCBG) computer spray dispersion model was recently used for temporary registration of two pesticides in Canada. FSCBG provided spray buffer width predictions for the forest herbicide Triclopyr (Dow Elanco) known under the trade names Release and Garlon 4; and the forest insecticide Mimic (Rohn Haas). For additional information -

CONTACT: BOB MICKLE (DOWNSVIEW, ONTARIO)

(416) 739-4851

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For more details contact:

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## LYME DISEASE RESEARCH

(Excerpts from article by Boyce Rensberger, *The Washington Post*, June 19, 1995)

"The bacteria that cause Lyme disease enjoy a cosmopolitan lifestyle. Sometimes they live in the cold gut of a tick. Sometimes they head for the warmer climes and the very different biochemical environment of a mammal's body, be it a mouse, a deer or a human enjoying the tall meadows of summer."

"And therein lies a biomedical mystery, one whose solution is leading to a new understanding of just how diabolically versatile some bacteria can be. In practical terms, it is leading to a clever new kind of vaccine that enables the human immune system to outwit the bacteria, killing them *before* they enter the body."

"The more we study this thing, the more amazed we are by what these organisms can do,' said Tom G. Schwan of the National Institute of Allergy and Infectious Diseases' Rocky Mountain Laboratories in Hamilton, Mont."

"Like all cells, the one-celled microbe that causes Lyme disease - a corkscrew-shaped bacterium, or spirochete, called *Borrelia burgdorferi* - wears an outer membrane studded with protein molecules. While in the tick's gut, the bacterium sports one protein dubbed 'outer surface protein A.' Its function is unknown."

"What Schwan's lab has established, however, is that once the tick sinks its mouthparts into a mammal and starts sucking blood, the bacterium shuts down its gene for making A proteins and starts up a gene for making a different protein called C, which is then installed on the outer surface. (Proteins B, D, E and F are also known but don't figure in this phenomenon.) The change is induced by two factors - a rise in the tick's body temperature to at least 90 degrees Fahrenheit (the result of close attachment to a mammal) and the presence in its gut of one or more unknown biochemical factors taken in with the mammal's blood. The function of protein C is not known either, but there are hints from the research."

"In related experiments, Joseph Piesman and colleagues at the Centers for Disease Control and Prevention's laboratory in Fort Collins, Colo., have found evidence that until this transition takes place, the bacterium is harmless to mammals."

"It takes at least two days and often longer before the spirochetes change proteins,' Schwan said. Until then, the cause of Lyme disease remains in the tick, where it cannot hurt the mammal. In other words, you run the risk of Lyme disease only if a tick bites you and you leave it there, slowly feasting on your blood, for at least two days. (Of course, these are not the big, easily seen dog ticks. Those don't carry this bacterium. The smaller deer tick does, and it's about the size of a poppy seed.)"

“Five years ago Erol Fikrig and his team at Yale University School of Medicine announced the development of a Lyme disease vaccine designed to induce the human immune system to make antibodies that can attack the A protein. Two versions of it are currently being tested in several thousand people by rival drug companies - Connaught Laboratories in Swiftwater, Pa., and SmithKline Beecham, a British firm whose American headquarters is in Philadelphia.”

“When the vaccine was tested on mice, researchers found that it worked in a surprising way. The vaccine contained A proteins, tricking the mouse immune systems into thinking the animal was being infected by a microbe carrying that surface protein. The immune systems responded by making antibodies that attack the A protein.”

“When scientists deliberately exposed the vaccinated mice to spirochete-carrying ticks, the rodents were protected. As the tick took in blood, it also swallowed the anti-A antibodies, which fastened onto the spirochetes’ A proteins and killed the microbes before they could get out of the tick gut. At first, the researchers thought this happened simply because it took time for the microbes to make their way from the gut into the tick’s saliva. The finding of the protein change shows that a more fundamental process, the slow switch-over of coat protein genes, is the real reason. The antibodies attacked and killed the microbes before they could carry out the protein switch.”

For a full copy of the article -

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## FLORA AND FAUNA ON THE WEB

(Excerpts from “ENVIRONMENT, Flora and Fauna on the Web,” *UC Davis Magazine*, Summer 1995)

“Want to find out about watershed projects in California? Plant species in Yosemite National Park? All from home? Then use your computer to connect to the UC Davis Information Center for the Environment.”

“The Information Center for the Environment, ICE for short, is a computerized access point for information on environmental projects run by UC Davis, government agencies and conservation groups. The center maintains a computer server that is linked to other servers via the Internet and can be explored on the World Wide Web....”

“The ICE server provides many types of information, including pictures, maps, bibliographies, database listings and contact information for representatives of the various programs.”

“If you are interested in connecting to the Information Center for the Environment, use the World Wide Web address <http://ice.ucdavis.edu/>.”



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## PUBLICATIONS, REPORTS, AND PRESENTATIONS

Anonymous. 1994. The consideration of inert ingredients in the risk assessment of pesticides. SERA TR-013-94-16. Prepared under USDA Contract No. 53-3604-4-002 by Syracuse Environmental Research Associates, Inc. for Animal and Plant Health Inspection Service (APHIS), Biotechnology, Biologics and Environmental Protection, Environmental Analysis and Documentation, USDA, Hyattsville, MD.

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The Washington Office, Forest Health Protection, Forest Health Technology Enterprise Team and the Pesticide-Use Management and Coordination Group co-sponsors and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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COMMENT PERIOD FOR THE NATIONAL GYPSY MOTH  
EIS ENDS JUNE 26

Comments on the draft environmental impact statement (DEIS), **Gypsy Moth Management in the United States: a cooperative approach**, should be received by the Gypsy Moth EIS Team in Radnor, Pennsylvania, by June 26, 1995, to ensure that they will be considered during preparation of the Final Environmental Impact Statement (FEIS). The EIS is a national,



programmatic document prepared jointly by the Forest Service and Animal and Plant Health Inspection Service. The EIS covers European and Asian strains of the gypsy moth and addresses the goal of preventing damage to trees and forests on public and private lands. The six alternatives examined in the EIS include these strategies separately and in combinations: **suppression** of gypsy moth outbreaks in the generally infested area to prevent or minimize damage to resources; **eradication** of isolated infestations that occur outside of the generally infested area to prevent establishment of new infestations; and **slowing the spread** from the generally infested area to delay the need for suppression activities.

The EIS analyzes the human health and environmental effects of implementing the alternatives including the effects of specific treatments. To assist in this analysis comprehensive human health and ecological risk assessments were prepared. Criteria used to compare and evaluate the alternatives, and to recommend the preferred alternative are based on the expected gypsy moth situation through the year 2010, USDA goals, public concerns, and ecosystem management.

To receive a copy of the EIS contact John Hazel, EIS Team Leader. Comments should be mailed without delay to:

John Hazel, EIS Team Leader  
USDA Forest Service  
5 Radnor Corporate Center, Suite 200  
Radnor, PA 19087-4585

CONTACT: JOHN HAZEL (PA)

(610) 975-4150

#### ENVIRONMENTALLY FRIENDLY AGENTS - NATURE'S BALANCING PROCESSES

The April 1995 issue of R&D Magazine has an article, provided by Dr. Harold Thistle, that discusses natural white rot fungal agents for environmental clean-up that are entering the marketplace. Quoting from Steven Aust, Utah State University -

"We then converted DDT all the way to CO<sub>2</sub>. Then we showed that this mechanism was applicable to whole groups of totally different kinds of environmental pollutants, even dioxin and munitions waste such as TNT."

Other environmentally friendly agents are discussed. For a copy of this two-page article -

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## FOREST PEST NETWORKS

Dale Bergdahl, a pathologist at the University of Vermont, has taken the initiative to set up several forest pest networks. These include FORPATH (general forest pathology), SOUTHPATH (southern forest pathology), NEFPW (northeast forest pathology), and FORENT (forest entomology). There is no charge - to subscribe send the following information to Dale: Name, postal address, phone #, fax #, e-mail address, and what networks you want to join. Dave's E-Mail address is: dbergdahl@clover.uvm.edu. On the DG it would be:

internet!clover.uvm.edu!dbergdahl@att:x400

## USDA DELAYS CHANGES TO PESTICIDE RECORDKEEPING REGULATIONS

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 5, May, 1995 - Cooperative Extension Service, Utah State University)

"The U.S. Department of Agriculture has delayed until August 1, 1995, the effective date for changes to 'Recordkeeping Requirements for Certified Applicators of Federally Restricted-Use Pesticides.' The changes were to have taken effect May 11, as stipulated in a February 10 notice in the *Federal Register*."

"Lon Hatamiya, administrator of USDA's Agricultural Marketing Service, said the postponement to the August 1 effective date will allow the agricultural community more time to adjust to the changes. 'This is the busy planting season and the extra time will provide producers, growers and farmers more time to learn about the new requirements and will not require private applicators to make adjustments in their recordkeeping procedures during this peak planting time,' he said."

"The requirement to keep records of restricted use pesticides, as published in the April 9, 1993, *Federal Register*, are still in place and only the amendments to the original regulations have been delayed."

"Amendments to the pesticide recordkeeping regulations, which will take effect August 1, 1995, include reducing the time to record a restricted use pesticide application from 30 days to 14 days; changing the way the locations for spot applications are recorded; clarifying access to and release of records for medical treatment; and clarifying provisions for penalties. USDA's pesticide recordkeeping regulations are authorized by the Food, Agriculture, Conservation and Trade Act of 1990."

"Details of the delayed effective date appear as a notice in the May 11 *Federal Register*. Copies and additional information are available from the Pesticide Records Branch, Science Division, AMS, USDA, Suite 200, 8700 Centreville Road, Manassas, VA 22110; telephone (703)330-7826." (USDA, 5/15/95)

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## REDUCED-USE PESTICIDE REGISTRATIONS

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 5, May, 1995 - Cooperative Extension Service, Utah State University)

"EPA recently registered two reduced-risk pesticides: flumiclorac pentyl (Resource <sup>TM</sup> herbicide), for use on field corn and soybeans; and methyl anthranilate (ReJex-iTMA<sup>TM</sup>), a bird repellent. In 1993, EPA began to encourage the development, registration and use of pesticides that present lower risks to public health and the environment."

"Resource<sup>TM</sup>, produced by Valent, is the first reduced-risk pesticide registered by EPA for food uses. The compound does not show evidence of adverse chronic effects such as cancer or birth defects. It is not expected to contaminate groundwater and is practically non-toxic to birds and bees. However, it is slightly to moderately toxic to fish, and highly toxic to certain estuarine organisms including shrimp."

"Methyl anthranilate (MA-PMC Specialities Group, Inc.), is used to repel birds including ring-billed gulls, Canada geese, mallards, starlings and brown-headed cowbirds. It is used in standing water. MA is considered a biochemical product and has equivalence to naturally occurring food ingredients. MA is found in flower oils and in grapes. It poses a low risk to humans and birds, a slight risk to fish and an unknown risk to non-target insects (studies on the latter are being generated). MA solves acute bird pest problems where existing bird control products could never be used. In fiscal 1996, EPA 'will stop processing and/or accepting applications that do not pass the 'safer' screen and/or are not in the public interest,' according to a recent EPA document." (PB),4/95)

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## PESTICIDE COLLECTION CENTERS IN RETAIL STORES? - EPA ANNOUNCES RECYCLE PROGRAM

(From *California-Arizona Farm Press*, June 3, 1995)

"The Environmental Protection Agency, as part of its effort to promote flexibility in its regulatory programs, has announced a voluntary recycling program for several common toxic items such as pesticides and batteries."



“The rule would simplify packaging and handling requirements on certain products that contain toxic chemicals, reduce the notification and recordkeeping requirements required when large quantities are being recycled, and would promote convenient collection centers in retail stores and other businesses nationwide.”

“It also allows states greater flexibility in how to regulate such recycling programs.”

“The rule, aimed at making it easier for consumers, farmers, and businesses to recycle common products that are sometimes toxic, is expected to save over \$70 million in compliance costs and to reduce regulatory requirements, including paperwork, by over a half-million hours.”

“It is expected, says EPA Administrator Carol Browner, to dramatically reduce the proportion of ‘universal’ hazardous wastes - a vast category of products - that households and businesses ordinarily throw in the trash and prevent them from being sent to landfills.”

“‘It’s common sense to give Americans and American businesses easy ways to recycle products that may pose hazards in our homes and in the environment,’ she said. ‘Now millions of consumers, farmers, and businesses can voluntarily help prevent pollution before it starts, in convenient, cost-effective ways.’”

“Many states and major industries strongly support the new rule, Browner said, because they have identified easy collection of universal hazardous wastes - such as batteries, pesticides, and thermometers that contain mercury - as a priority to insure sound environmental management of these substances.”

“Pesticides that can be voluntarily recycled under the new rule will include certain hazardous waste pesticides, as well as those that have been suspended, canceled, and recalled.”

For more information contact your regional EPA office.

## EPA APPROVES POTATO PLANT-PESTICIDE

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 5, May, 1995 - Cooperative Extension Service, Utah State University)

“EPA approved for the first time full commercialization of a plant pesticide - a potato that contains genetic material needed to make an insecticide within the plant. Because the insecticide is natural and nontoxic to animals, it does not pose a risk to public health or the environment. In addition to registration, EPA also issued an exemption from a tolerance for residues of the plant-pesticide active ingredient *Bacillus thuringiensis* (CryII(a))delta endotoxin and the genetic material necessary

for its production) in potatoes. EPA's initial approval of the registration for this plant-pesticide was in late March, which allowed for planting limited acreage for plant propagation (seed potatoes). On May 5, EPA amended the March registration to allow full scale commercialization of this plant-pesticide in potatoes (registered and produced by Monsanto Co. of St. Louis) under the trade name NewLeaf. EPA has undertaken these actions after a thorough examination of this product to ensure that human health and the environment would be protected. The plant-pesticide was produced when genetic material necessary to make an insecticidal substance was taken from a bacterium found in nature, *Bacillus thuringiensis*, and transferred to potatoes. Transfer of this genetic material into the plants enables them to produce an insecticidal protein identical to that produced in the bacterium. In this case, the Colorado potato beetle is the target insect of the *Bacillus thuringiensis* insecticidal protein produced by the potato plant. The insecticidal protein is produced in very small quantities by the potato plant, is non-toxic to mammals, birds, and most other insects. The use of this new plant-pesticide will eliminate the use of chemical pesticides now sprayed on the crop to control the Colorado potato beetle. In addition, the registrant has provided a pesticide resistance management plan which was found to be scientifically sound by EPA's Subpanel of the Scientific Advisory Panel. The Agency has reviewed and previously registered approximately 175 *Bacillus thuringiensis* pesticide products for insect control since 1961. Monsanto is working with EPA to refine the management plan further. EPA believes this produce will contribute to the goal of reduced pesticide risk and use." (USDA, 5/8/95)

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## PERENNIAL WEEDS REAL CHALLENGE FOR ORCHARDISTS

(From *California-Arizona Farm Press*, June 3, 1995)

"Occasional patches of perennial weeds in orchards are always posing a threat. Wilbur Reil, farm advisor for Yolo and Solano counties in California, says he has seen several orchards under an excellent weed control program except for the patches of perennials. The infestations usually border the field or are isolated in one area, he says."

"The best time to control hard-to-kill weeds like johnsongrass, bermudagrass, field bindweed or puncture vine is during the first year they are found in the orchard,' Reil says. 'Better yet, control them before they are established in the orchard.'"

"Cars on county or state highways occasionally transport and drop seeds. Seeds also can be imported by birds, animals, implements and people, the Extension advisor notes. These seeds establish alongside the roadway or in the orchards and eventually can infest large areas."

"Reil says a good weed control program should include identifying the problem areas and then applying control sprays whenever needed. Small isolate infestations should be eradicated as soon as possible."

"There are several good contact sprays available that will control or eradicate weeds when applied properly," Reil says. "Digging out and burning a small isolated plant also is very effective if you can remove all the underground reproductive parts."

#### **READ THE LABEL -**

#### **"MAN POPS 25 'BUG BOMBS' - GETS MORE THAN HE BARGAINED FOR"**

When I lived in the tidewater area of Virginia there were times we called for heavy artillery to deal with cockroaches, the big black types that were unfamiliar to us sheltered mid-westerners. Others apparently have even less patience and take more drastic steps. The following is an article that appeared in *Associated Press*:

"WESTMINSTER - A man trying to rid his apartment of cockroaches set off 25 pesticide bombs that blew out the windows and set his furniture ablaze, a fire official said. One or two canisters should have done the job, but Steve Tran wanted to 'really do it good' on Saturday when he decided to fumigate his Orange County home, said fire Capt. Craig Campbell. Tran and his wife set off the pesticide-releasing 'bug bombs' shortly before 10 p.m. and were heading out the door when the explosion occurred, Campbell said. No one was injured, but damage was estimated at \$10,000. Ironically, the incident does not seem to have killed all the cockroaches. 'When we got there, there were still some running around,' Campbell said."

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#### **PLAGUE SOURCE STILL SOUGHT**

#### **'Black Death' fatality is first in Kern County since 1984**

(Following are excerpts from an *Associated Press* article which appeared in the *Sacramento Bee*, April 25, 1995)

"TEHACHAPI - Biologists have been searching the mountains of Kern County with little success for the source of plague believed to have killed a local man, a state health department spokesman said Monday."

"John Breen, 23, died this month with signs of bubonic or pneumonic plague, which was also believed responsible for the deaths of a domestic cat and a bobcat in nearby Keene. Tehachapi is 100 miles north of Los Angeles."



“Pneumonic plague, though rare in humans, is more contagious than bubonic plague because it can be spread by breathing. Both are forms of the plague bacillus *pasturella pestis*, the ‘Black Death’ of the 14th century, which is common among California ground squirrels and other rodents.”

“Investigators were looking into the possibility that Breen may have handled a dead animal at the recycling center where he worked, Jay [Dr. Michelle Jay, a research scientist with the health department] said. The infection in its bubonic form is most commonly transferred to humans by fleas.”

“Typically, this time of year we put out a release warning people that plague is out there, rabies is out there, hantavirus...,’ Lewis said. ‘My standard advice to people is, if you’re not on a first-name basis with an animal, stay away from it.’”

## **PUBLIC PERCEPTIONS OF AGRICHEMICALS**

### **Interpretive Summary - CAST (Council for Agricultural Science and Technology)**

By Eileen O. van Ravenswaay  
Department of Agricultural Economics  
Michigan State University

(From *CAST*, January 1995)

**“Public Perceptions of Agrichemicals** - Public perceptions of the risks and the benefits of agrichemicals can influence government and business decisions regarding use and development. A growing body of research is improving scientific understanding of these perceptions and their impact on food purchases. This Council for Agricultural Science and Technology report reviews relevant research findings and develops recommendations for policy for future research.”

**“Risk Perceptions** - Contrary to popular belief, perceptions of risks from residues of agrichemicals in food differ greatly among members of the public. Approximately one-fourth perceives a great chance of harm from pesticide residues in food whereas approximately the same percentage perceives very little or no chance. The differences observed imply that there are very different information needs and policy preferences among different segments of the public.”

“The public perceives a range of health effects broader than the cancer risks typically addressed by the government: for example, some are concerned about allergies and nervous system disorders. Furthermore, concern regarding agrichemicals is not limited to food and food safety but extends to

concerns about the environment and agricultural workers. These latter concerns may be reflected in public attitudes about residues in foods. Risk communicators need to address a wider range of concerns than just the potential carcinogenicity of agrichemicals or just the risks from residues in food.”

“Trust in government and industry may be a more important influence on risk perception than is the inherent safety or the danger of an agrichemical. The majority of the public does not trust government to set or to enforce safety standards, or farmers to ensure that the foods they sell are safe. Restoring public trust should be a high priority.”

“**Pesticide Use** - The public generally believes that insects, diseases, and other pests need to be controlled but also believes that there are effective alternatives to pesticides. Because about half of the public does not believe that these alternatives are costlier, much of the public perceives little or no benefits from pesticide use.”

“There is evidence that the public is willing to pay more for tougher pesticide residue standards and their intensified enforcement. Whether public willingness to pay can offset the cost of eliminating agrichemical use is unknown. In some cases, it may not be possible to produce acceptable foods without agrichemical use.”

“Consumers differ greatly in terms of their willingness to purchase foods labeled *pesticide free*. Consequently, one pesticide-residue standard is unlikely to please all consumers. Extensive research is needed before definitive conclusions about the potential success of labeling efforts can be made.”

## LIFE AFTER METHYL BROMIDE

(Excerpts from T.J. Burnham’s article which appeared in the June 3, 1995 issue of *California-Arizona Farm Press*)

Lodi, CA - “BIRC [Bio-Integral Resource Center], a non-profit IPM research group with headquarters in Berkeley, has a few solutions to offer that, when added up, promise some help in the wake of a potential MB loss.”

“Production and import - but not use - of MB is destined to end in 2001 under the U.S. Clean Air Act as an alleged ozone depleting substance. About three quarters of the chemical used in the U.S. is applied as a soil fumigant to control nematodes, insects, weeds, pathogens and rodents.”

“Many of the potential alternative chemicals also are being pulled (out of use) by the regulators,’ noted Liebman [BIRC researcher]. ‘As a result, we are literally running out of soil fumigants in agriculture. For that reason, we are now looking at a multiplicity of methods to control the problems farmers face.’”

“BIRC’s effort includes a survey of growers, pest control advisors and others in agriculture regarding their pest control programs used as an option to MB. ‘What we are finding is that a tremendous diversity of methods exist,’ he reported, ‘in terms of methyl bromide substitutes.’”

“Some growers, he said, claim they are already getting successful results without using MB.”

“Some of the alternatives, said Leibman, include use of compost, which growers in Ohio where MB is already banned report to be successful in phytophthora control in nurseries.”

“What is interesting in California, he noted, is that some grape growers have not used MB as an ongoing practice. ‘An estimated 53 percent of the grape acres are treated,’ he noted. ‘That means 47 percent of the grape acreage in California doesn’t use methyl bromide. Our interest was in finding out why and what they are doing instead.’”

“Among other reasons not to use MB were timing problems associated with grower schedules (heavy rains often prohibited use), concern with beneficial soil microbes and the availability of alternatives.”

“Among the latter, he listed cover crops as a key for some producers in control of soil pests. Disking in some types of organic matter, these growers reported, appears to lessen nematode attacks on vines. ‘We do not have good scientific information on this approach,’ said Liebman.”

“Using heated compost is also used as an MB alternative, he said. The product running about \$8-\$10 per ton, estimated Liebman, is becoming an option of choice by ‘a lot of growers’ today. Some, he noted, add microbial products to the compost. This practice also requires additional research, he noted.”

“Another choice may be as simple as heating water. One company, Aqua Heat Technology, Inc., is already developing a machine to pasteurize field soil through 220-degree water injection, said Liebman. Prototypes have already been tested in Florida tomatoes and citrus where the unit was ‘highly effective’ in nematode kills, he said.”

“Just as much on the cutting edge is the effort at UC-Davis to make use of microwaves to zap nematodes in the soil, although energy requirements for using this approach may be prohibitive at this time, Liebman concluded. The process, he feels, may have more application in nursery situations.”

“Another bit of research is actively looking at use of undersoil electrodes which fry nematodes in greenhouses.”

“Among the other possibilities is solarization using clear plastic mulches that raise soil temperatures so high nematodes simply cook to death. Very hot areas of the Central Valley California deserts may benefit most from this practice.”



## FOREST AND RIGHT-OF-WAY PEST CONTROL

A well illustrated soft cover book by the above title has just been published by the University of California, Statewide Integrated Pest Management Project. The authors, Patrick Meyer (pesticide training coordinator), Mark Grimes (writer), and Richard Cromwell (Agricultural Engineer) have organized the book into three parts: Forest Pest Control, Right-of-Way Pest Control, and Calibration described through 15 chapters and 350 pages. Principal USDA Forest Service contributors and reviewers were Pat Trimble (Eldorado NF), Pat Shea (PSW), Mike Rutty (Stanislaus NF), and Jack Barry (WO). Pesticide coordinators, silviculturists, and forest health specialists will find this a valuable reference and a real value at the \$30.00 price.

For information about ordering this publication contact: Publications, Division of Agriculture and Natural Resources, University of California, 6701 San Pablo Avenue, Oakland, CA 94608-1239, telephone 510-642-2431 (in California only - 1-800-994-8849), FAX (510)643-5470, E-Mail: anrpubs@ucdavis.edu.

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## SOUNDS LIKE A GOOD IDEA TO ME - A PROPOSED WESTERN BIOLOGICAL CONTROL CENTER

A regional, interagency western biological control center at Montana State University is being proposed according to Dr. Norm Rees, research entomologist, USDA-ARS, Bozeman, MT. According to the draft proposal -

“The Western Biological Control Center will be an interdepartmental, interagency facility dedicated to research technology transfer, and implementation of biological control for weeds and insect pests on rangelands, croplands, and forests. Through cooperation with Montana State University (MSL), it will enhance and encourage federal agencies existing biological control programs.”

“Weeds and insect pests devastate America’s rangelands, croplands, forests, and wild lands. Producers struggle with reduced crop yields and higher production costs. Native plants are overwhelmed on private and public lands. Livestock and wildlife lose healthy and diverse forage. Biological agents will control weeds and insect pests to restore economic and ecological health to Western lands. Appropriately applied biological controls improve agricultural production, increase diversity within plant and animal communities, and provide protection for native species. A regional center for the study and application of biological controls is proposed.”

“Proposed plans include offices and laboratories for federal agencies and MSU faculty whose responsibilities include agricultural research, land and resource management and environmental monitoring. In addition to the USDA-Agricultural Research Service and MSU, agencies that may participate include the Forest Service, USDA-APHIS, Bureau of Land Management, Bureau of Indian Affairs, Fish & Wildlife Service, Agency for International Development, Environmental Protection Agency, and others.

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### **NEW BOOK - BIORATIONAL PEST CONTROL AGENTS: FORMULATION AND DELIVERY**

The 21 chapters in this American Chemical Society (ACS) book are subdivided into six categories: registration needs and data requirements, basic information needs, delivery and environmental fate, soil biorationals, foliar biorationals, and forest biorationals.

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Please forward to me by the 14th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of Short Subjects and Timely Tips. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

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The Washington Office, Forest Health Protection, Forest Health Technology Enterprise Team and the Pesticide-Use Management and Coordination Group co-sponsors and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/oul=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.





SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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EPA PROPOSES ADDITIONAL RESTRICTIONS ON PICLORAM

Those of you who use picloram (the active ingredient in Tordon products) for noxious weed control, rights-of-way treatment, and other uses may be interested in some additional label restrictions the EPA is proposing for this herbicide. The maximum broadcast rate would be reduced from 2.0 lbs ae/acre to 0.5 lbs ae/acre. Spot treatment would be lowered to a maximum rate of 1.0 lb ae/acre, and no more than 50% of an acre could be treated. Forestry rates would be reduced to a maximum of 1.0 lb ae/acre, and picloram could be used only once every five years. Right-of-way rates would be reduced to a maximum of 1.0 lb ae/acre, and picloram could be used only once every four years. Several State pesticide regulatory agencies have expressed concern to EPA about the restrictions. Limitations on the frequency of right-of-way application concern could be a problem for some county weed control programs. If you have concerns, you should contact your State pesticide regulatory agency.

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## AE OR AI? - AN EXPLANATION

(Editor's note: The following is in response to my question to Ed Monnig, USDA Forest Service, Region 1, Missoula, MT, asking him what AE in ae/acre stands for. Here is his reply for those of you who also may not be familiar with the term.)

It stands for "acid equivalent." It is more or less equivalent to "active ingredient" (ai) and is used where the parent compound of the herbicide is an acid. Here is my best explanation of why they use the term "ae." The parent acid of the herbicide is often the compound that does the killing. However it may not be very stable, or it may be missing some other desirable property. For example, 2,4-dichlorophenoxyacetic acid is the parent acid in 2,4-D formulations. Often the 2,4-D acid is reacted with one of many alcohols to form an ester (a 2,4-D ester). The weight of each of these 2,4-D ester molecules can be considerably greater than the weight of the 2,4-D acid molecule you started with. For example, you may turn 1 pound of 2,4-D acid into 1.5 pounds of 2,4-D butyl ester and 1.75 pounds of 2,4-D octyl ester (don't hold me to the exact math on that). However, the 1.75 pounds of octyl ester won't have any greater theoretical killing power than the 1.5 pounds of butyl ester (although the octyl may be less volatile). To get things on a comparable basis in either case we say we have 1 pound of acid equivalent of 2,4-D. It's like the difference between gross weight (can + peaches) and net weight (peaches alone) when we buy a can of fruit. See also the pesticide label for "acid eq."

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## NEW ADVANCES IN BEETLE MANAGEMENT FOR SINGLE TREES

(The following article was submitted by Jane Leslie Hayes, USDA Forest Service, Research Programs—West, Southern Pine Beetle, Pineville, LA.

Semio-chemical attractants have long been used to monitor bark beetle activity and a few pheromone antiaggregations, in particular MCH and verbenone, are making their way down the long winding road to registration. Another semio-chemical, which has been found to be produced by host pines, has been shown to have repellent properties to most species of conifer-feeding bark beetles (3,4,5). The chemical, 4-allylanisole (4-AA), is a phenylpropanoid that is typically found as a small but consistent component of the oleoresin of many pines, including the southern pines preferred by southern pine beetle (SPB). In laboratory and field studies, SPB exhibit consistently negative (>80%) response to the presence of this chemical, while at the same time, natural enemies are unaffected. In practical tests of 4-AA as a protectant of threatened trees, the material has been remarkably effective. For example, pines (loblolly and longleaf) struck by lightning were treated





with 4-AA within 48 hours of being struck. Trees of the same species struck by lightning in the same storm were also located and served as untreated controls. All treated trees were protected for the 30 days, while untreated trees were attacked and eventually were killed. Similarly, 4-AA is currently being used as a protectant for red-cockaded woodpecker (RCW) cavity trees. RCW is a federally listed endangered species which uniquely nests in living mature pines by constructing cavities in the bole of the tree. These cavity trees are a limited resource for this bird. Mortality patterns of these trees suggest they are susceptible to attack by SPB (6). Thus protection of the cavity tree and immediate habitat trees is critical to the survival of this species. Since 1992, approximately 200 RCW cavity trees, many of which were severely challenged by nearby beetle pressure, have been treated with 4-AA and to date no protected cavity trees have been lost to bark beetle activity.

**SPB Outbreak in Gainesville, Florida** - In two noteworthy instances, lightning struck pines in residential settings were treated as described above. In both cases, the trees were protected from SPB attack for the 30 days of 4-AA treatment. These results led to the natural course of considering the use of 4-AA in urban/forest interface protection. A rare and intense SPB outbreak occurred in incorporated Gainesville FL during the spring and summer of 1994, over 18,000 pines (primarily loblolly) were infested. The community, under the direction of the Florida Division of Forestry and with federal assistance, combatted this "freak" outbreak aggressively, eventually removing all infested trees and in most cases treating uninfested trees with registered materials for protection (lindane and chlorpyrifos). On a small-scale and voluntary basis, five homeowners allowed us to treat their trees (73 trees) with 4-AA; additionally two infestations in pine stands were treated. Virtually, all untreated trees in the vicinity of active infestations were attacked, all three materials, lindane, chlorpyrifos, and 4-AA, provided good protection (90%), while 4-AA provided homeowners an environmentally-neutral alternative.

**Repellent for scolytids - Future Directions/Availability** - A patent for the use of 4-AA as repellent for scolytids (bark beetles) that attack conifers has been issued jointly to the Forest Service and FPL-MSU (7). Licensing of 4-aa will be pursued by MSU Sponsored Programs; a market analysis is underway. EPA has (verbally) granted a waiver for the environmental use permit requirement of 4-aa for use in large-scale (250 ac). An information session was held at Pineville, LA (28 Feb - 3 March), regarding research and development of 4-aa. In attendance were representatives of FSR, FH-R8, FS Patent Program, MSU Sponsored Programs, and Phero Tech, Inc. Efforts to better define and expand the use of 4-aa are underway, including a TDP (R8-95-05) project to evaluate the efficacy of 4-aa in combination with verbenone in spot disruption and reducing tree loss. If the combination of 4-aa and verbenone should prove to be equally effective, given the ready availability and relatively low cost of 4-aa, the results of this TDP project could enhance to use of semio-chemical-based suppression technology.





Outside of labor, the cost per tree in the Gainesville work was approximately \$30 for 3 months protection. Development of an effective, efficient and economical elusion device is needed and work is ongoing toward that end. At present, using our experimental techniques, the initial set-up requires using climbing ladders and vials must be refilled approximately monthly, depending on the weather. Because protection is often a long-term proposition, slow release devices that can be installed without climbing and which last for 60-90 days are desirable.

Ultimately toxicity studies are needed. To date, the only toxicity data available, shows 4-AA to be non-toxic to avian subjects (4). When used topically or in a saturated environment, some toxicity has been demonstrated in spruce beetles. However, because the projected use of 4-AA is limited to deterrence or inhibition, it is unlikely that doses high enough to cause toxic reaction would be used. Avoidance of resistance and redistribution of beetles through deterrence are areas that need to be explored further in developing management regimes.

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## EPA ISN'T PLANNING WIDE PESTICIDE BAN

(Article by Lynn R. Goldman, M.D., Assistant Administrator, Environmental Protection Agency, Washington, *The Wall Street Journal* Friday, April 14, 1995)

"I am writing to correct a Feb. 9 Legal Beat article on the Environmental Protection Agency's settlement of a lawsuit with the state of California, the National Resources Defense Council and others regarding the Delaney clause of the Federal Food, Drug and Cosmetics Act (FFDCA). The article incorrectly states that the EPA has agreed to ban dozens of widely used pesticides."

"The above settlement simply commits the EPA to decide on the applicability of the Delaney clause, as the law requires; it does not require that we ban any pesticides. In addition, the settlement addresses only certain uses of carcinogenic pesticides - those that are applied directly to processed food or that appear to concentrate when raw food is processed. Thus, for example, use of the fungicide Captan on certain crops (three out of six) might be affected."

"In general, the EPA agrees with those who say that the Delaney clause is an outdated approach for protecting consumers from pesticide residues. The loss of selected pesticide uses may affect the price or seasonal availability of particular commodities. Theoretically, a 'zero risk' approach to cancer for these few pesticides could lead to the use of alternative pesticides with more net risks, but no cancer risks. These costs to society buy little in the way of additional public-health protection."

"That is why, in 1994, the Clinton administration sought to amend the nation's food-safety legislation to replace Delaney and other standards with a single legal standard of a 'reasonable certainty of no harm' (a 'negligible risk' for carcinogens) for all pesticide residues on all foods. Such a public-health-based standard would allow Congress to ensure that the people in this country will continue to enjoy the safest food supply in the world."

"Unfortunately, the debate over the Delaney clause has been contentious and has resulted only in protracted deadlock."

## ARTIFICIAL LIGHTNING MAKES TOXICS SAFE?

(Scientists testing waste disposal method)

(Article by Paul Recer, *Associated Press, The Sacramento Bee Final*, Saturday, April 22, 1995)

"WASHINGTON - Man-made lightning searing at up to 18,000 degrees can turn toxic and municipal wastes into harmless blocks of glass at a fraction of the cost of current disposal techniques, MIT researchers say."





"The process could transform much of the nation's garbage and poisonous wastes into paving material, the researchers claimed at a meeting here of physicists."

"Artificial lightning bolts arcing across a nitrogen-filled furnace chamber create a superheated plasma that 'will melt just about anything' and neutralize molecules of highly toxic chemicals, David R. Cohn, a researcher at the plasma physics laboratory at Massachusetts Institute of Technology, said Friday."

"Cohn, speaking at the national meeting of the American Physical Society here, said the electrical charge in the powerful heat of the furnace 'is like a sledgehammer that can take virtually any material and turn it into a neutral substance. It is like a continuous bolt of lightning."

"Toxic chemicals, such as solvents, he said, 'are blown apart by the high temperatures and the atoms recombine into simpler and less toxic and more manageable molecules."

"Gas waste from the process is about a tenth of that from conventional incinerators, he said."

"Since the process occurs in a nitrogen-filled furnace and in the absence of oxygen, said Cohn, the plasma furnace does not create new toxic chemicals, such as dioxins, as do some current techniques of waste processing."

"Also, he said, the plasma machine does not create toxic ash, a problem with most conventional incinerators. Instead, the MIT process reduces the wastes into a lava-like glass that is benign and chemically neutral."

"It could be used to pave roads or for railroad beds,' Cohn said."

"Since the MIT process operates at such high temperatures, Cohn said, it could melt virtually anything, even soil. He said the technique could be used to dispose of municipal garbage, which often contains hazardous materials, and to clean up toxic chemical dumps."

"He said the plasma furnace will process hazardous wastes at the cost of \$200 to \$300 a ton. The cost of current techniques can be as much as \$800 a ton and those processes are less efficient, said Cohn."

"MIT researchers reported at the physicists meeting that they have built an experimental model of the plasma waste machine and have operated it continuously for hours. The group is preparing further tests."





“Cohn said the plasma machine could be used to dispose of nuclear wastes, but the product would be radioactive glass blocks that, in turn, would have to [be] safely stored. The advantage, he said, is the glass blocks would be stable and would not leach radioactive molecules.”

“This would be stable for a very, very long time,’ he said.”

### REMOTE HELICOPTER SPRAYS FIELDS

(From *Ag-Pilot International*, May 1995)

“Japanese farmers and technicians recently inspected a Yamaha R-50 unmanned, remote-controlled helicopter with a belly-mounted spreader.”

“The helicopter has a maximum takeoff weight of 148 pounds. Practical payload is 44 pounds, and flying duration is about 30 minutes. The helicopter is used in Japan to spray pesticides and fertilizers on small farm plots, at an altitude of 10 feet. It is powered by a 6-cu.-in., 12 hp engine.”

“The R-50 has been operational since 1991, but Yamaha has not allowed export sales to avoid foreign certification costs and identify and correct potential operational problems.”

### FDA PESTICIDE RESIDUE MONITORING - 1993

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 4, April 1995 - Cooperative Extension Service, Utah State University)

“The seventh in a series of annual reports from the Food and Drug Administration (FDA) that describes FDA’s pesticide monitoring program and present findings from the monitoring, was published in the September, 1994 issue of the *Journal of Official Analytical Chemists* and is available as a reprint. The article’s title is: Food and Drug Administration Pesticide Program - Residue Monitoring - 1993. The 1993 report explains the 3 approaches FDA uses to carry out its pesticide program, regulatory monitoring, incidence/level monitoring, and the Total Diet Study. Results are given for Fiscal Year (FY) 1993 for regulatory and incidence/level monitoring. Some results for 1991-1993 for the Total Diet Study are also included.”

“In 1993, under its monitoring focused on enforcing tolerances set by the Environmental Protection Agency (EPA), FDA analyzed a total of 12,751 samples of domestically produced food and imported food from 107 countries. Of these, 12,166 were surveillance samples, collected when there is no evidence that a shipment might contain illegal pesticide residues. No pesticide residues were found



in 64% of the 5,703 domestic surveillance samples, less than 1% had residues that were over EPA tolerances, and 1% had residues for which there was no established tolerance for that particular pesticide/commodity. Of the 6,463 import surveillance samples, 69% had no residues detected, less than 1% had residues that were over tolerance, and 3% had residues for which there was no tolerance."

"Under incidence/level monitoring, 3 projects were completed in FY 93. In an aquaculture survey, 308 samples of shellfish and finfish were analyzed for some environmentally persistent pesticides. Low levels of chlorinated pesticide residues, none of which exceeded regulatory limits, were found in a number of the samples. A survey of pasteurized whole milk from U.S. metropolitan areas found that residues of chlorinated pesticides were present in 35% of the 308 samples. These pesticides have not been registered for food use in over a decade; however, because of their persistence in the environment, they are still present at low levels in some foods. A statistically based survey of domestic and imported pears and tomatoes was completed in 1993. In most cases, the results were similar to those found under FDA's regulatory monitoring."

"Under the Total Diet Study, which measures pesticide residues in foods as consumed, 1,566 food items representing the diets of U.S. consumers were analyzed in 1991-93. Of the nearly 300 chemicals that can be determined by the analytical methods used, 99 were found in the foods analyzed. Malathion, which is used on a wide variety of crops, was the most frequently found residue."

"This annual summary of FDA's pesticide residue findings reveals small numbers of violative samples, and, as in previous years, confirms the safety of the food supply relative to pesticide residues. For copies of the report, contact: Norma J. Yess, FDA, Office of Plant and Dairy Foods and Beverages, Division of Programs and Enforcement Policy, HFS-308, 200 C Street, SW, Washington, DC 20204. (FDA, 09/94)"

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### LONG SLEEVES CAN HELP

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 4, April 1995 - Cooperative Extension Service, Utah State University)

"Did you know that you can eliminate 98% of pesticide exposure by simply wearing long-sleeved shirts and chemically resistant gloves! Research shows that of the contamination that lands on your body during the mixing and loading process, 85% gets on your hands and 13% of it lands on your forearms. This adds up to 98%. Most of you know the importance of wearing gloves when handling





pesticide concentrate, but use inspections have found that many applicators are not protecting their forearms. Go to your closet now. Pull out a long-sleeved shirt that you can dedicate to pesticide handling. Put your long-sleeved shirt with the rest of your Personal Protective Equipment and wear it only for pesticide handling. Wash it separately from the family laundry. For products that bear a 'warning' or 'danger' signal word, wear chemically resistant forearm protectors over your long sleeves."

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## **CAL/EPA GUIDES COMMISSIONERS ON PESTICIDE RULE**

(Article by Steve Sutter, UC Area Farm Advisor, *California-Arizona Farm Press*, Saturday, May 6, 1995)

"In January, Cal/EPA's Department of Pesticide Regulation issued a policy letter (ENF 95-005) on 'enforcement discretion for worker safety violations committed by employees.' Agricultural commissioners were given guidance on violations by an agricultural (or nonagricultural) employer of a pesticide worker safety regulation due to an employee's not wearing PPE required by regulations or labels."

"If a commissioner takes action against an employer when an employee doesn't wear employer-provided PPE, he or she may take a 'compliance action' (no penalty) instead of an 'enforcement action.' This discretion's allowed only if the employer: (1) maintains a written hazard communication program and has provided employee training as required by regulations and the program; (2) has provided and maintained required PPE which was available at the work site when the employee was handling the pesticide; (3) maintains a safe workplace and knows safe use requirements specified in regulations and labeling; (4) has less than three worker safety violations in the commissioner's county in the past two years; and (5) 'has established and follows a written company policy that requires the employer to take disciplinary action against employees who violate company policy, and state, federal or local pesticide laws and regulations and the employer has taken disciplinary action against the employee in accordance with the policy.'"

"It's most interesting to note commissioners may also use discretion in initiating enforcement action against the employee (and/or employer) if, despite an employer's compliance with all other regulations, an employee fails to wear required PPE. When labeling requires PPE, and the employee doesn't wear it, commissioners may take enforcement action against the employee as a 'user,' citing Food and Agriculture Code Section 12973 (using a pesticide in conflict with labeling), instead of against the employer for violating worker safety rules."





“Fines for serious violations causing actual injuries could range from \$400 to \$1,000. Fines for moderate violations posing a reasonable possibility of health effects but no actual injury - no harm no foul - could range from \$150 to \$400. Some employers may wish to communicate this to handler employees in annual refresher safety training.”

“The department advised commissioners that although enforcement action against an employee failing to wear required PPE’s remains an option, it’s important to remember employers always have responsibility to supervise and train pesticide-handling employees and provide them with required PPE.”

## **INTEGRATED PEST MANAGEMENT COURSE FOR FOREST NURSERIES SCHEDULED**

The Integrated Pest Management (Insects, Diseases, and Competing Vegetation) Course for Forest Nurseries is scheduled for June 17-25, 1995 in Kemptville, Ontario, Canada. This course will examine IPM for forest tree nurseries within the context of the following nursery goals: produce high quality seedlings, produce needed seedling quantity; protect human health; protect environment; do all this at cost efficiency. In this course, pest will refer to insects as well as diseases and competing vegetation. Control for some of the more common problems caused by abiotic (such as winter desiccation and heat damage) or cultural (such as fertilizer damage) factors will also be discussed. Course instructors from across North America with world class technical reputations and superior communication skills will be facilitating a 9-day learning experience through lectures, field trips, practical field exercises, and discussion groups.

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## **ADVANCED FOREST HERBICIDES COURSE SCHEDULED**

The Advanced Forest Herbicides Course is scheduled for September 23 - October 1, 1995 in Thunder Bay, Ontario, Canada. This course is designed to advance the skills and knowledge of forestry professionals in current techniques and principles for planning, implementing and evaluating Integrated Forest Vegetation Management (IFVM) programs, not simply as tactical control programs, but in reference to the broader scope of Integrated Resource Management (IRM). Course instructors from across North America with world class technical reputations and superior communication skills will be facilitating a 9-day learning experience through lectures, field trips, practical field exercises, and discussion groups. Upon completion of the course, participants will be knowledgeable in: vegetation management tactics, environmental impact evaluation methods, human health concerns, forest vegetation management/silviculture, evaluation of vegetation management options, and program management/conflict resolution. For more details:

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## **THE NATIONAL AGRICULTURAL PESTICIDE IMPACT ASSESSMENT PROGRAM (NAPIAP)**

The Forest Service awards NAPIAP grants to studies of the benefits and risks of pesticides registered by U.S. Environmental Protection Agency for use in forest and rangeland management, and to fill data gaps for pesticide reregistration. Washington Office, Forest Health Protection sends a call letter annually to Regional Offices and Experiment Stations, who in turn contact potential investigators for study proposals that respond to priority research topics.

Agricultural Research Service and Forest Service each contribute fifty percent to an annual budget of approximately \$722,000. The funding available for new proposals varies from year to year, depending on the funding needed to continue previously awarded, multiyear studies. In Fiscal Year 1995, ten continuing studies received NAPIAP funding. Three Regions, four Stations and Northeastern Area submitted 26 new proposals, of which eight were awarded NAPIAP funding.





In August 1995, the NAPIAP proposal grant cycle will begin anew with the FY 96 call letter. Pesticide-Use Coordinators are encouraged to solicit proposals to respond to your information needs, within the framework of national research priorities.

CONTACT: GARY K. SMITH (DC)

(202) 205-1611

**USDA-FOREST SERVICE NAPIAP PROPOSALS  
FY 1995**

NAPIAP PROPOSAL		FY 95 (k\$)
ID #	PROPOSAL TITLE	FUNDING
	-----	
FPL-32	Chemical Changes and Leachability of Metals in Decayed CCA-treated Wood	\$ 33k
INT-23	Management Unit Scale Plant Community Restoration	\$ 13k
NA-44	Influence of Sediment on Dimilin Toxicity and Dimilin-induced Deformities in the Blue Crab	\$ 48k
SO-35	Residual Effects of Herbicide Site Preparation on Floristic Diversity	\$ 31k
R6-8	Effectiveness of Less-toxic Controls of Pest Organisms for Logs to be Imported to the U.S.	\$ 60k
R6-11	Field Monitoring Populations of Lepidoptera in Spruce Budworm Infested Forests and Assessing the Impact of B.t.k. on Nontarget Lepidoptera	\$ 54k
R6-13	Monitoring Long-term Effects on Non-target Vertebrates Following a Strychnine Application to Control Pocket Gopher	\$ 40k





**NAPIAP  
PROPOSAL**

**FY 95 (k\$)  
FUNDING**

<b>ID #</b>	<b>PROPOSAL TITLE</b>	
R8-28	Field Terrestrial Dissipation Study of Imidacloprid in the Georgia Coastal Plain	\$ 89k
R1-5	Validation of field models predicting pesticide leaching	\$ 51k
R6-6	Herbicide Evaluation for noxious weed control	\$ 8k
PNW-47	Ecological impacts of applying chloropicrin to Douglas-fir stumps	\$ 16k
INT-22	Ecological restoration by herbicide treatment of an exotic weed	\$ 47k
NA-32	Genetic potential for development of resistance to B.t. in the gypsy moth	\$ 32k
NA-34	Alternative methyl bromide technology	\$ 41k
NC-27	Development of 2,4-D resistant Siberian elm	\$ 17k
NC-28	Refinement of dazomet application for root rot control in nurseries	\$ 52k
NC-29	Possible genotoxic interactions of 2,4-D, inerts, adjuvants, and other herbicides in tank mixes	\$ 54k
PNW-53	Impacts of B.t.k. on non-target lepidoptera and population surveys	\$ 41k



## CALL FOR ARTICLES

Please forward to me by the 16th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of *Short Subjects* and *Timely Tips*. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

CONTACT: PAT SKYLER (CA) (916)757-8343  
FAX (916)757-8383  
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## PUBLICATIONS, REPORTS, AND PRESENTATIONS

Barry, J.W. 1995. Sixth report - National steering committee for management of seed, cone, and regeneration insects. FPM 95-11. USDA Forest Service, Forest Health Protection, Davis, CA.

MacNichol, A.Z. 1995. C-47 aircraft spray deposition - Part 2: FSCBG model prediction of deposition and biological response. Report FPM 95-8 (C.D.I. Technical Note No. 95-04). USDA Forest Service, Forest Pest Management, Davis, CA.

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The Washington Office, Forest Health Protection, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.





SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS

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## A NEW APPROACH TO ESTABLISHING BUFFER ZONES IN CANADA

In 1989, the Canadian Interdepartmental Task Force on Pesticide Drift was formed to develop new regulatory guidelines in the registration of pesticides by assessing the potential for drift associated with a given use strategy. The outcome of this process would be an assessment of the expected environmental concentrations which, in association with the toxicology data already provided by the applicant, could be used to determine the environmental significance of the predicted drift and, if necessary, to estimate buffer zones as a mitigative measure. These predictions would rely heavily on scientific results from field trials that were compiled into a database or on scientifically based dispersion models that had been validated against the database.

Early this year, Triclopyr, a silvicultural herbicide, received temporary registration in Canada for aerial application. As part of the agreement, DowElanco will provide to the Canadian provinces that request it, a copy of the Forest Service Cramer-Barry-Grim (FSCBG) computer model, developed jointly by the USDA Forest Service and U.S. Army, for estimating drift and establishing appropriate buffer zones. A commitment for training in use of FSCBG also formed part of the registration agreement.

In response to this temporary registration, a 2-day course was developed to train attendees on the running of FSCBG and to carry out case studies on utilizing the model to establish buffer zones for Triclopyr. To date, courses have been given in Toronto and Edmonton to 40 attendees from across Canada including federal and provincial regulators, forest pest managers, environmental inspectors and industry representatives. Another course is planned for Quebec in mid-April (see following article). The course involved an intensive hands-on introduction to FSCBG given by Milt Teske, Continuum Dynamics Inc., with emphasis put on the use of the Near Wake code with continuous deposition to the ground which is available in the advanced version of the FSCBG model. Participants were able to explore the model utilizing an operational scenario relevant to forestry herbicide spraying. The majority of the second day was devoted to investigating the impacts of various operational spray scenarios (case studies) on buffer zones utilizing the Buffer Zone graphics package.

For the case studies, a range of operational sprays were evaluated to assess their impact on the size of buffer zones using specific biological endpoints from the Decision Document on Triclopyr. The impact of block size, aircraft/atomizer combination, aircraft height and meteorology were all explored in terms of their relevance to buffer zone size. The model provided the user an opportunity to observe the impact of operational parameters on deposit uniformity and drift fate.

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## SPRAY MODEL TRAINING - FIRST FRENCH LANGUAGE PRESENTATION

As we reported in the last Timely Tips, three Forest Service Cramer-Barry-Grim (FSCBG) dispersion model technology transfer training sessions were scheduled for Toronto, Edmonton, and Quebec City. The one in Quebec was completed just last week (19 April), and became the first training session conducted in a foreign language (French). Milt Teske (Continuum Dynamics, Inc.) and Bob Mickle (Environment Canada) were on hand to handle the technical questions (through French-English-French translations). Many of the attendees were provincial regulators interested in FSCBG modeling capabilities. On 20 April a hands-on training session was conducted with four major aerial applicators in Quebec. This meeting was bilingual; the applicators were impressed with the predictions made by the model (because they matched their field experience) and have every intention of responding to the regulator simulations with their own simulations. Environment Canada sponsored the Toronto session; Edmonton and Quebec City sessions were sponsored by DowElanco Canada.

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Milt Teske (Continuum Dynamics, Inc.)	(609) 734-9282
Jack Barry (USDA Forest Service)	(916) 757-8342

## US-EPA/CA ENVIRONMENTAL PROTECTION COOPERATION

(Excerpts from *California-Arizona Farm Press*, April 15, 1995)

"The U.S. ENVIRONMENTAL Protection Agency and the California Environmental Protection Agency's Department of Pesticide Regulation concurrently have registered a new biological pesticide, marking the first anniversary of an agreement to harmonize federal and state pesticide registration activities."

"By using flexibility and common sense, we have together found ways to register pesticides in more cost-effective and streamlined ways, so that products such as the new biological pesticide can enter the marketplace faster," said Lynn Goldman, EPA's assistant administrator for Prevention, Pesticides and Toxic Substances."

"In early 1994, the two agencies entered into an initial agreement to harmonize pesticide registration activities in the acute toxicology area. Under the new agreement, numerous new activities will take place, with the goal of mutually sharing work results beneficial to each."





## PESTICIDES ON-LINE

Free trial offer!! For a limited time only, Forest Health Protection (FHP), Washington Office is offering pesticide search services to field units. Gary Smith, on detail to WO-FHP, will search a battery of pesticide data bases for your information needs on topics of:

- o Federal registration information, searching all pesticides registered by US-Environmental Protection Agency.

- Active, Cancelled or Suspended registration status and dates
  - Special Local Needs registrations
  - Registered sites, pests and active ingredients by product
  - Registered products for site-pest combinations
  - Producer/distributor information

- o State registration information, updated annually for 30 states
- o Current MSDS (Material Safety Data Sheet) for 1100 major-use pesticides
- o Study reports submitted to US-EPA to fill data requirements for registering pesticides.
- o EPA Fact Sheets and residue tolerances

Even the entire Federal Register since 1990 can be searched!

Not available in any store; no salesperson will call. Consultation is also available for anyone who wants their own franchise. Just pick up the phone (or DG) and:

CONTACT: GARY SMITH (DC)

(202)205-1611

DG: G.SmithC:W01C

## RECENT MEETING WITH EPA

On April 7, 1995, Ann Bartuska, Director; Nancy Lorimer, Assistant Director; and Dave Thomas, Pesticide Specialist, Forest Health Protection Staff in the Washington Office met with the Environmental Protection Agency (EPA) on several forestry issues. They met with Janet Andersen, Acting Director, and Phil Hutton, Product Manager of the Biopesticides and Pollution Prevention Division within EPA's Office of Pesticide Programs. Several forestry issues were discussed, including the label language required by EPA on all forestry products to meet the standards set forth in the Worker Protection Standard. Although the Washington Office was successful in obtaining temporary label language changes, it was agreed that a more intensive meeting would be requested with EPA in the near future. The meeting would be attended by the Directors of





Biopesticides and Pollution Prevention, Registration and Field Operations Divisions within EPA, Forest Service personnel, and members of the forestry community. The purpose of the meeting is to resolve forestry issues that have arisen with regard to the Worker Protection Standard. The Washington Office will summarize the results of this meeting and distribute them as appropriate.

Other topics included the status of the registration package submitted to EPA on MCH in 1993. EPA agreed to respond to the Washington Office within two weeks to identify what additional information will be required by EPA to obtain full registration. Once EPA responds to the Washington Office, the required information will be assembled and submitted to EPA expeditiously.

The status of the reregistration packages for Gypchek and TM-Biocontrol 1 was also discussed. EPA agreed to respond in writing on the current status and report when reregistration will occur.

EPA suggested that a joint EPA/Forest Service seminar on Research and Development of forestry related biorationals, semiochemicals and biological pesticides be held with the staff of the Biopesticides and Pollution Prevention Division. Presentations of various aspects of the Forest Service's current and ongoing work in these area would be made by the principal investigators to EPA. The objective is to establish a working partnership with EPA and the Forest Service so that expedited registration of new and promising materials can be obtained quickly (i.e. three weeks to nine months). The Forest Service agreed to participate in such a seminar.

Lastly, EPA asked if there would be any interest in detailing a Forest Service employee to EPA for six months to work with EPA's registration process. The Washington Office will pursue this opportunity with EPA.

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### **DGPS EQUIPMENT SEMINARS HELD IN PHOENIX AND NIAGARA FALLS**

(From Trip Report by Bill Kilroy, Missoula Technology & Development Center, (MTDC/FHP) April 4, 1995)

SatLoc of Casa Grande, AZ held an equipment seminar March 16 and 17 at Williams AFB southeast of Phoenix. These industry sponsored sessions were a direct result of the round table discussions held during the DGPS Aircraft Demonstration in Missoula last October and were sponsored by FHP and MTDC. The need for more customer support, and the need for government FPM personnel to be more informed about the DGPS systems their contractors would employ on spray projects, prompted these companies to create these training sessions.



As part of the training, a GPS equipped van was made available to the students for some "hands on" training. SatLoc introduced their "Foreststar" parallel swath guidance system during the course. Their course was very comprehensive with five or six personnel being involved with the presentation, including engineers and programmers. Two films were shown, and all components of the system discussed at length. A video camera was used to project the image of the navigation display and control key pad onto a large screen at the front of the classroom. Using this, they ran the students through a series of simulated system checks and operational setups. The program menu was covered in detail and all operational considerations such as A-B line and polygon construction discussed. A good bit of time was also devoted to trouble shooting. On Friday morning they covered their Mapstar digital base mapping system, and map conversion program.

Pestechcon-Agnav's training program was held on March 23 and 24 in Niagara Falls, NY. The Pestechcon presentation covered the same operational areas as SatLoc's and also included a visit to Picodas' assembly facility near Toronto, Quebec, Canada. Pierre Rouleau conducted the classroom instruction utilizing a training program that was loaded into each participant's laptop computer. Again the course was very comprehensive covering all components of the system, the installation and setup, and the operational considerations such as polygon and A-B line creation. Also covered were digitizing and UTM and GIS and State Plane coordinate conversion. In Toronto, engineering and programming personnel continued the program. They described the equipment in detail and discussed "in the field" trouble shooting. Picodas also presented their P111. This is the same as the P101 pc unit, but with improved weather resistant packaging, and military type cable connectors.

The sessions were designed for government personnel, and approximately 20 state and federal individuals attended each session. Both companies did a good job in their instruction. It appears that both firms intend to continue offering these classes.

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### TOP TEN USES OF PESTICIDES

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 3, March 1995 - Cooperative Extension Service, Utah State University)

"U.S. farmers use approximately 886 million pounds of pesticides in crop production on an annual basis. A recent study by researchers at the National Center for Food and Agricultural Policy (NCFAP) delineates this usage by crop, state, and pesticide. The study indicates that herbicides to kill weeds account for the greatest usage at 454 million pounds a year, while insecticide use totals 149 million pounds per year. A fourth category of pesticide use consists of products used as crop defoliants, growth regulators, and soil fumigants and accounts for 154 million pounds per





year. The study also indicates that most individual pesticides are used on only a small fraction of the crop acreage planted. (NCFAP, 2/9/95).

	Active Ingredients	ml/y*	Crops	ml/y*	States	ml/y*
1	Sulfur (F)	83	Field Corn	240	California	152
2	Atrazine (H)	72	Soybeans	74	Florida	55
3	Metolachlor (H)	59	Cotton	72	Illinois	54
4	Alachlor (H)	52	Potatoes	60	Iowa	53
5	Oil (I)	51	Grapes	56	Washington	38
6	Methyl Bromide (O)	44	Citrus	34	Nebraska	33
7	2,4-D (H)	42	Tomatoes	27	North Carolina	33
8	1,3-D (O)	40	Pasture	25	Minnesota	31
9	Cyanazine (H)	32	Tobacco	24	Georgia	31
10	Metam Sodium (O)	29	Peanuts	24	Indiana	30

F=Fungicide, H=Herbicide, I=Insecticide, O=Other

\*ml/y=millions lbs/year"

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#### BEES AS BIOCONTROL AGENTS

Agricultural engineers have patented a device that forces bees exiting hives to walk through a mixture of talc containing an insect virus. In field tests the bee transmitted nuclear polyhedrosis virus reportedly killed 74-87% of corn earworm larvae by depositing the virus in the blossom. (Sources *Research*, March 1995 and *Agricultural Research*, January 1995.)

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#### IPM - A PASSING FAD? NOT BY A LONG SHOT

Hembree Brandon *Farm Press* editorial staff, reports that under the direction of Deputy Secretary of Agriculture Richard Rominger, a unified effort has been put in place to have IPM programs in place on 75 percent of U.S. crop acres by the year 2000.

Larry Elworth, Special Assistant for Pesticide Policy for the Under Secretary for Natural Resources and Environment, USDA, told members of the National Alliance of Independent Crop Consultants - "In the past, there has been a lot of criticism that IPM was too loosely coordinated and didn't live up to its potential, but we've proposed a fairly far-reaching initiative to overcome this."





Brandon further reported that IPM programs will have more influence on the course of agriculture in the years ahead than the controversial Worker Protection Standard now causing so much concern according to a USDA official.

(Reference *California-Arizona Farm Press*, March 4, 1995)

(Editor's note: The FHP staff, Washington Office, is a standing member of USDA's, IPM committee, and has provided input on forestry issues pertaining to IPM. WO contact is Dave Thomas - (202) 205-0889.)

CONTACT: JACK BARRY (CA)

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### BIOLOGICAL CONTROL - OUR BARN OWL FRIENDS

While not new to the Nature Conservancy and wildlife biologists, others are experimenting with potential of controlling rodents in almond orchards. Mark Freeman (University of California Cooperative Extension Farm Advisor) is evaluating the barn owls as a predator to control rodents. Current control practices use poison baits and flooding that impacts on non-target species.

(Following are excerpts from a *California-Arizona Farm Press*, March 4, 1995 article.)

"Freeman is strategically placing specially designed barn owl nesting boxes in almond orchards and introducing orphaned owls that were hand-raised by Fresno Wildlife Rehabilitation."

"Last year, 75 birds were released at 15 locations in Fresno and Madera counties. 'We experimented with different release box designs. Last December, (the California Department of) Fish and Game approved a transportable box that was found to pose no hazard to the birds,' Freeman said. 'This spring, we will release more barn owls in different ag areas and compare different nesting box designs.'"

"During the two-year study, Freeman said he will also try to document the barn owls' ability to control gopher populations. The owls regurgitate a ball of indigestible bones and fur following a meal. Collecting these pellets and counting skulls will give the scientist an idea how many gophers were killed in a field. Although the verdict is not in, farmers who wish to try the barn owl gopher control can build or purchase nesting boxes and allow wild owls to take up residence. 'Barn owls are always looking for good nesting sites, particularly in January, February and March,' Freeman said."

"The nesting boxes should be dark inside and include a roosting platform and slanted false bottom that allows the regurgitated pellets to roll out. It should be mounted on a pole, tree or barn 15 to 30 feet above the ground. Several owl house design plans are now available at the UC Cooperative Extension office at 1720 S. Maple Ave., in Fresno. A complete how-to manual will be available soon."

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## PESTICIDE DATABASE AND DIETARY EXPOSURE

(From *California-Arizona Farm Press*, March 4, 1995)

“National Center for Food and Agricultural Policy researchers report that a new pesticide database helps to meet the Clinton administration’s goal of making realistic risk assessment calculations.”

“In the absence of realistic usage data, calculations of dietary exposure rely on a default assumption that 100 percent of a crop’s acreage is treated with all registered pesticides. The NCFAP researchers note that such a calculation would overstate usage by at least 20 times, in terms of pounds of pesticide applied.”

## MYCOGEN TO TEST BIOINSECTICIDES

(From *Crop Protection Manager*, January 1995)

“*SAN DIEGO, Calif.*—Mycogen Corp. has begun testing new environmentally compatible biological insecticides and insect resistant corn plants under experimental use permits from the EPA, says Mycogen chairman, president and CEO Jerry Caulder.”

“Under the bioinsecticide EUP, the company is testing combinations of four protein biotoxins derived from *Bacillus thuringiensis* (Bt) microorganisms that occur naturally in soil. All of the biotoxins are genetically engineered using Mycogen’s proprietary CellCap encapsulation system. Three genetically engineered CellCap products, MVP, M-Peril and M-Trak, have already been registered by EPA.”

“The permit authorizes tests to control caterpillars and worms of the *Lepidoptera* order in more than 20 crops, including cotton, alfalfa, tree fruit, grape and berry vines, melons, lettuce, strawberries, sugarbeets and tomatoes.”

“Mycogen has also applied for state testing permits in the 17 states in which it plans to conduct tests on more than 3,000 acres. Mycogen has identified and catalogued thousands of Bt strains, Caulder says, and has applied for patents on 29 of the 46 known Bt biotoxins.”

For a complete copy of this article -

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## BIOTECHNOLOGY - ROUGH ROAD, GREAT PROMISES

(Excerpts from *California-Arizona Farm Press*, February 18, 1995 article by Harry Cline, *Farm Press* editorial staff)

"There is peril in living in a risk-free society as some advocate and that is the risk of not continuing to progress, Jerry Caulder, president and chief executive of the Mycogen Corp., told the annual meeting of the California Fertilizer Association recently in Palm Desert, Calif."

"Unlike conventional pesticides, genetically engineered plants must go through an arduous registration process that includes not only the Environmental Protection Agency, but the U.S. Department of Food and Agriculture and the Food and Drug Administration."

"Biotechnology is the fifth major technological breakthrough in the history of agriculture. The first was domestication of plants and animals and the fourth was the development of modern day agricultural chemicals. Mechanization and genetics were the other two."

"None was without the naysayers like those who are challenging today's biotechnology, says Caulder."

"Unfortunately, those who oppose pesticides or biotechnology do so not from a scientific perspective."

"We are not losing tools we need or use in agriculture because of science, but simply because someone does not like them. That's how regulations get passed today,' he says."

"Biotechnology is safe and there's nothing to fear from it, he says. It has been utilized for years. 'We have been moving genes from one organism to another within a species for years. Today's biotechnology does one new thing. It allows the movement of genes between species.'"

"We need to educate the public, but is going to be a long process that must start in the educational system,' he says."

"However, he did agree that communications between the mainstream agriculture and biotechnologists has not been good. However, many of the companies involved in plant biotechnology are major chemical companies."

"Caulder says biotech plants will not totally displace pesticides and fertilizers. 'Biotech and pesticide will co-exist in the same environment,' he says."

For a complete copy of this article -

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## CHLORINE BLEACH THE REAL CULPRIT

(From *Crop Protection Manager*, January 1995)

“*SACRAMENTO, Calif.* – The majority of illnesses attributed to pesticides did not involve the agricultural use of pesticides, according to a report by the California Department of Pesticide Regulation. Nonagricultural use of disinfectants and other pesticides accounted for 1,212 of the 1,804 reported illnesses in 1991 with a possible or confirmed link to pesticides, according to the report. Chlorine bleach, or sodium hypochlorite, was the most common cause of nonagricultural pesticide illness. Agricultural use of pesticides was a possible or confirmed cause of illness in 592 cases in 1991. The number of illnesses from pesticides has remained stable during the last decade, not counting exposure to antimicrobial chemicals and large spill cases, the report concluded.”

## PESTICIDE VOLATILITY REEVALUATED

(From *Crop Protection Manager*, January 1995)

“*SACRAMENTO, Calif.* – The volatility potential of liquid formulations of agricultural and commercial structural pesticides are being reevaluated by the California Department of Pesticide Regulation as part of a plan to reduce the release of volatile organic compounds (VOCs) into the atmosphere. Pesticides formulated as flowable concentrates, emulsifiable concentrates, oils, aqueous concentrates, suspensions, ready-to-use solutions and micro-encapsulated products are considered liquid by the department.”

“The formulations may contribute to tropospheric ozone formation, according to the department. VOCs can react in the atmosphere with nitrogen oxides in sunlight to form ozone, which is harmful to humans and vegetation. Some 299 registrants and 1,434 products are affected by the reevaluation. Solid formulations will be assessed at a later date.”

“The reevaluation is part of the effort by the Department of Pesticide Regulation to develop a state implementation plan (SIP) under the Clean Air Act to maintain and enforce the National Ambient Air Quality Standards (NAAQS). This is the first step toward reducing VOC emissions from pesticide use in NAAQS nonattainment areas, such as Sacramento, Ventura and the South Coast.”

“Product registrants are required to submit data that will allow the department to assess the volatility potential of their products.”





## NEW VIDEOTAPE DEMONSTRATES HOW TO MODERNIZE SPRAYERS

(From *Crop Protection Manager*, January 1995)

**"New Life for an Old Sprayer**, a 13-minute educational videotape, shows how producers can increase accuracy, efficiency and convenience of crop protection product application by adding new technology to their sprayers. The videotape demonstrates a variety of new sprayer technologies that can be fitted on older sprayers and reviews important preseason reconditioning steps. The 1/2-inch VHS videotape is available for \$15, including shipping and handling. To order, write to Videotape Request, Spraying Systems Co., Agricultural Division, P.O. Box 7900, Wheaton, IL. 60189-7900, or call (708) 665-5000."

## NEW GROUNDWATER PROTECTION GUIDE AVAILABLE

(From *Crop Protection Manager*, January 1995)

**"Pesticides and Groundwater: A Guide for the Pesticide User** explains the factors that influence the movement of pesticides to groundwater and the use of integrated pest management to reduce the risk of contamination. Cost: \$4, including shipping and handling. For more information, contact the Northeast Regional Agricultural Engineering Service at (607) 255-7654."

## GUIDE TO WPS COMPLIANCE AVAILABLE

(From *Crop Protection Manager*, January 1995)

**"Meeting Worker Protection Standard Guidelines** spells out the federal WPS requirements handlers and employers need to meet in easy-to-understand language. The guide features charts, questions and answers, definitions and other important information. Published by DowElanco, the guide also includes WPS label information on products. To order the free publication, write WPS Guide, CPM Magazine, PO Box 1-B, Eugene, OR 97440, or call (800) 874-3276."

## CHEMICAL PERSISTENCE FOCUS OF NEW BOOK

(From *Crop Protection Manager*, January 1995)

**"Fate and Prediction of Environmental Chemicals in Soils, Plants and Aquatic Systems** focuses on the chemical persistence and ecological effect of pesticides in soil, water and plants. The book examines recent developments in research on various substances and relays information regarding transport, absorption, accumulation, degradation, biological effects and other aspects. Cost: \$87 plus shipping and handling. For more information, contact Lewis Publishers at (800) 272-7737."



## **CAL/EPA RESIDUE MONITORING - CONSISTENTLY LOW LEVELS**

In a recently released report California Environmental Protection Agency reported a low level of pesticides in fruits and vegetables. Chuck Andrews, chief of the enforcement branch, stated that "from year to year, less than 1% of the samples we test have illegal residues, and that figure has remained consistent for years."

(Following are excerpts from a *California-Arizona Farm Press*, February 18, 1995 article.)

"Screening techniques can pick up residues as low as 10 parts per billion, depending on the pesticide, the commodity being analyzed, and the turnaround time for testing. (One part per billion is equivalent to one pinch of salt in 10 tons of potato chips.)"

"Beginning in 1991 and through 1992, we have seen a trend toward a higher percentage of detectable residues,' said Andrews. 'Tremendous analytical advances are making it possible to detect a broader range of chemicals at lower and lower levels.'"

"The increase in detected residues does not mean there is more risk,' Andrews said. 'Our analysis has shown that much of the increase in detectable residues has been at levels of 20 percent or less of the tolerance level - in other words, residues that less sophisticated monitoring would have missed. Minute traces of pesticides in food are to be expected, and are not considered significant health threats.'"

"What hasn't changed is the fact that illegal residues are very rare, and that any residues that are present in produce are typically at exceedingly low levels.' Andrews said."

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(916) 757-8342

## **COMPARISON OF MODELLED AND MEASURED DEPOSIT WITH EFFICACY IN A GYPSY MOTH VIRUS SPRAY TRIAL**

R.E. Mickle, N.J. Payne, and J.C. Cunningham

(Paper to be given at the *XXVIIth Eastern Canada Pesticide Residue and Environmental Contaminants Workshop*, Sault Ste. Marie, May 27-29, 1995.)

### **Abstract**

Spray efficacy trials in Pinery Provincial Park were carried out to evaluate two treatments made with a gypsy moth virus. In support of these trials, extensive meteorological data using tethered





balloons and towers were taken to document the conditions during which the sprays took place. On board the Cessna 188 spray aircraft, positional information from a Differential Global Positioning (DGPS) Guidance system was logged at one second intervals along with aircraft height, ground speed, flow rates and AU4000 automizer rpm. These data were used as inputs to the FSCBG model using the near wake with continuous deposition to predict spray deposit for the spray block. Comparisons with measured deposits on oak leaves, artificial foliage and ground cards gave a linear correlation between predicted and measured deposit. The modelled deposits were then compared with pupal counts from burlap traps at a number of sampling sub-plots within the treated block. This comparison showed a strong correlation between predicted deposit and pupal counts at the selected sampling sites.

CONTACT: R.E. MICKLE (ONTARIO, CANADA)

(416) 739-4851

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## ADVANCED FOREST HERBICIDES COURSE SCHEDULED

The Advanced Forest Herbicides Course is scheduled for September 23 - October 1, 1995 in Thunder Bay, Ontario, Canada. This course is designed to advance the skills and knowledge of forestry professionals in current techniques and principles for planning, implementing and evaluating Integrated Forest Vegetation Management (IFVM) programs, not simply as tactical control programs, but in reference to the broader scope of Integrated Resource Management (IRM). Course instructors from across North America with world class technical reputations and superior communication skills will be facilitating a 9-day learning experience through lectures, field trips, practical field exercises, and discussion groups. Upon completion of the course, participants will be knowledgeable in: vegetation management tactics, environmental impact evaluation methods, human health concerns, forest vegetation management/silviculture, evaluation of vegetation management options, and program management/conflict resolution. For more details:

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## OTHER WAYS TO CONTROL PESTS

Of the various methods to control pests, chemical, biological, cultural, fire, thermal, and physical, thermal and physical have potential for increased use in nursery and orchard pest management. An example of thermal might be flame or heat equipment to control weeds or insects in duff; while an example of physical control might be sweeping and vacuuming to collect and dispose of ground litter containing seeds, insects, and pathogens.

The Missoula Technology and Development Center has an FHP funded project to investigate thermal equipment to control seed and cone insects in litter and to look at feasibility of orchard sanitation methods using mechanical equipment to physically remove litter. Keith Windell (406) 329-3956, is the MTDC project contact.

An example Aqua Heat Technology, Inc., Minneapolis, NM, (612) 572-9884, Fax (612) 572-9893, is marketing a system that applies hot water to control weeds and insects, and to desiccate plants prior to harvest.

There are other approaches. Do you know of other technologies or have specific needs that have potential for use of thermal and physical approaches?

CONTACT: JACK BARRY (CA)

(916) 757-8342





## CALL FOR ARTICLES

Please forward to me by the 15th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of Short Subjects and Timely Tips. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

CONTACT: PAT SKYLER (CA) (916)757-8343  
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### Editor's Note:

HP = Forest Health Protection, proposed name that replaces FPM (Forest Pest Management).

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The Washington Office, Forest Health Protection, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.





**SHORT SUBJECTS  
AND TIMELY TIPS  
FOR PESTICIDE USERS**

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**NEW TO FOREST PEST MANAGEMENT IN THE WASHINGTON OFFICE**

Ann Bartuska recently announced two additions to the Pesticide-Use Management and Coordination Group. As many pesticide users have known there have been four vacant positions for some time. Nancy Lorimer will assume the duties as Assistant Director starting a one year detail effective on March 5. Nancy had previously been on the Forest Health Staff within Forest Pest Management. Gary Smith has accepted a one year detail as a Pesticide Specialist. His effective date is April 2. Gary is currently the Integrated Pest Management Specialist in Region 6. They will be both pleasant additions to the Pesticide-Use Management and Coordination Group.

CONTACT: ANN BARTUSKA (DC)

(202) 205-1600



## **FSCBG AND BUFFER ZONES IN CANADA**

In the last month or so, a DowElanco pesticide was approved for use in Canada. This event has initiated an immediate scheduling of three FSCBG (Forest Service Cramer-Barry Grim) model training sessions (Toronto on 28 February to 1 March; Edmonton on 8-9 March; and Quebec City on 19 April). Environment Canada (through Bob Mickle) has strongly supported the use of the near-wake model (AGDISP) in FSCBG, that is wrapped in the user-friendly interface of FSCBG itself. The model will be used primarily to predict buffer zones for aerial applications. At this point we anticipate 60 new Canadian users of FSCBG, cutting across all of the professions that can take advantage of the computing potential in the model; from environmental regulators and fish and wildlife personnel; to the applicators themselves. Representation at the two training sessions conducted so far covers all of Canada. It is truly refreshing to see the participants interact with each other during the sessions, uncovering the potential of the model as they help each other understand its operation. Coupled with a strong user group in New Zealand (20 users of FSCBG), the Forest Service model also has a clear appeal outside the United States.

For information on the model and the user group, contact Tom Curbishley, Continuum Dynamics, Inc., (609) 734-9282.

For information on the role anticipated for the model in Canada, contact Dr. Robert Mickle, Environment Canada, (416) 739-4851.

CONTACT: MILT TESKE (NJ)

(609) 734-9282

## **Btk LABEL LANGUAGE ISSUE**

Recently it was brought to the attention of the Washington Office that language added to the label of certain Btk products, Dimilin and Disrupt II, to comply with the new Worker Protection Standard was creating confusion to Forest Service personnel, the public and various State Departments of Agriculture. The language required by the Environmental Protection Agency on the nonagricultural label states:

“Not for use on trees being grown for sale or other commercial use, for commercial seed production or for the production of timber or wood products, or for research.”

On the agriculture label, the following language appears:

“Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.”





Although the Worker Protection Standard specifically exempts “wide-area government sponsored pest control programs” from having to comply with WPS, a great deal of confusion has been created. In fact, one gypsy moth project on the Monongahela National Forest was recently appealed; one of the specific issues raised was the label language identified above. Delays resulting from appeals further jeopardize the gypsy moth program.

The Washington Office is working very closely with EPA and the manufacturers to resolve this issue quickly. Specifically, the Washington Office wrote two letters to EPA requesting new label language with specific language that would avoid the conflicts being experienced by the field. The manufacturers agreed with the Washington Office suggested label language. There was also a request to resolve all of the forestry related issues with the Worker Protection Standard, such as reentry intervals for materials such as Btk. A meeting between the Director of Biopesticides, the Director of Registration and the Director of Field Operations at EPA and the Director of Forest Pest Management will be held in the very near future to come to resolution to these issues.

CONTACT: DAVE THOMAS (DC)

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## HEXAZINONE WORKER EXPOSURE RESULTS

In 1993, R5 initiated a NAPIAP worker exposure study in cooperation with the Worker Health and Safety Branch, California Department of Pesticide Regulation (CDPR) to gather data regarding potential worker exposures when applying Pronone by conventional hand application techniques. This study was undertaken as part of the monitoring requirements under the Region’s programmatic FEIS, “Vegetation Management for Reforestation”. In October 1993, several abnormal incidences of very dusty product conditions were observed during hand application of Pronone on two Ranger Districts on the Eldorado National Forest. Contract applicators, USFS inspectors, and CDPR personnel all experienced symptoms consistent with hexazinone inhalation exposure. Common symptoms observed and experienced were smelling and tasting the Pronone and irritation and burning of the mouth, nose, and lungs. Frequent coughing and spitting to ease discomfort also was evident. All personnel experienced immediate and permanent relief after dusty conditions abated. In follow-up inquiries of applicators by the CDPR staff, no worker reported any persistent effects.

Preliminary results of worker monitoring under these conditions also show that exposures were much higher than estimated using the models in the FEIS and site-specific NEPA documents. Earlier monitoring of FS applicators had indicated exposures lower than model estimates. This product has had a good track record of use and excessive dustiness has not been a historical problem with Pronone. These preliminary results reflect abnormal problems with several lots of Pronone which contained higher levels of dust and clumps than



previously observed during applications on National Forest lands. Uncertainty exists as to the causes of excessive dustiness. We don't know if the dust problem was a result of manufacturing, packaging, storage, transport, or handling. The manufacturer and California distributor have been alerted to this problem.

In cooperation with the CDPR, R5 has implemented the following measures to prevent further incidences of excessive human exposures when Pronone is used:

1. Forest Service contract inspectors shall monitor Pronone applications and be alert to any incidents of excessive dustiness of the product. Excessive dustiness is defined as when Pronone dust is readily visible during application and/or when symptoms of Pronone exposure are exhibited.

2. If further incidents of excessive dustiness occur, application of that batch or lot will cease and the product will be replaced. No application is to continue where dustiness results in excessive exposures. Samples of the dusty product shall be collected for testing and the supplier of the product shall be contacted. All incidents of dustiness or reports of symptoms by workers shall be documented and reported within 24 hours to the Regional Pesticide-Use Specialist.

3. A written statement shall be provided to contractors stating that:

"A risk of potential irritation problems may occur when properly applying Pronone. Symptoms include a noticeable taste and odor as well as burning and irritation of the mouth, nose, and lungs often resulting in frequent coughing and spitting to ease discomfort. These problems have been observed when excessive product dustiness has occurred during application of Pronone. If these conditions occur, stop application until the dusty product is replaced."

The contractor shall also be advised of proper actions to take in the event of dusty conditions (see 2 above). Contractors shall provide this information to their employees prior to any Pronone application.

4. The Contracting Officer or representative (COR) shall provide this information to all Forest Service personnel administering the contract. For applications by FS crews, the project supervisor is responsible for informing employees and implementing this direction.

We believe that the excessive dusty condition of the Pronone represents an unusual situation not typical of common usage of the product. This direction is intended to provide additional protection to workers and to prevent further incidences of exposure from applying excessively dusty product.

CONTACT: JOHN BORRECCO (CA)

(415) 705-2873





## **SOCIETY OF ENVIRONMENTAL TOXICOLOGY & CHEMISTRY**

The Second SETAC World Congress will be held 5-9 November 1995 at Vancouver, BC. The theme is "Global Environmental Protection: Science, Politics, and Common Sense." Categories of the proposed sessions and symposia are Environmental Chemistry and Exposure Assessment, Regional and Global Issues, Risks and Regulations, and Stressors and Biological Effects. Within these general categories specific sessions include:

- Global Forest Pest Control
- Agrochemicals: Chemistry, Fate and Transport
- Bioaccumulation: Processes and Significance
- Fate Modeling and Validation
- Effects Assessment and Global Characterization
- Bioassay Development and Validation
- Chemical Residues and Ecotoxicology

Abstracts are due 1 May 1995.

CONTACT: JACK BARRY (CA)

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## 5 PESTICIDES WILL REQUIRE STATE MANAGEMENT PLANS

(From *Utah Pesticide and Toxic News*, Vol. XIII, No. 1, January 1995, Cooperative Extension Service, Utah State University)

“On August 23, 1994, EPA designated the broad-spectrum herbicides atrazine, simazine, cyanazine, alachlor, and metolachlor as the first pesticides that will require State Management Plans (SMPs) to continue their use. EPA chose these five pesticides because they may pose an unreasonable adverse effect to the environment due to their groundwater contamination, potential. These pesticides are the most commonly detected in the nation’s groundwater and one of them, atrazine, already has a groundwater caution statement on the label.”

“A SMP for a given pesticide represents a state’s commitment to use a designated pesticide in a manner which will not threaten human health or the environment. Once EPA endorses a state’s generic SMP, it can be easily modified to create a pesticide specific SMP for any pesticide required by EPA to have an SMP. This will allow the state to continue use of the product while insuring it does not have an adverse impact on human health and the environment. (PB,1/95)”

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## NAPIAP AND IPM

(From *Chemically Speaking*, December 1994, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida)

“The USDA initiative on Integrated Pest Management (IPM) has received significant attention during the past months. The USDA’s National Agricultural Pesticide Impact Assessment Program (NAPIAP) supports this effort and is working to apply its data resources to address IPM needs that complement NAPIAP’s mission.”

“A variety of activities are encompassed within NAPIAP’s mission, but a major emphasis is on assessing the benefits of pesticide use. Integrated Pest Management (IPM) includes the judicious use of pesticides in combination with host resistance, biocontrol, and other means of reducing damage from crop and animal pests. Recently NAPIAP has placed emphasis on assessing pest control efforts for commodities. Since this approach examines and compares all approaches to pest control, the close working relationship with IPM can be easily seen. NAPIAP assessments consider the availability and effectiveness of non-chemical practices, the role of pesticides in IPM systems, and the potential for IPM to reduce health and environmental risk more efficiently than regulatory actions. NAPIAP has funded research and special projects to provide the basis for evaluating the economic impacts of chemical and non-chemical practices. Ultimately the information that NAPIAP generates will be useful to measure changes in pesticide usage related to the degree of IPM adoption.”



“NAPIAP was an active participant in the Second National Integrated Pest Management Symposium/Workshop held in Las Vegas last April. Many of these thoughts were expressed at the meeting. The IPM initiative currently under development will strengthen the information available on pest management impacts. We feel that the program is a strong supporter of IPM concepts, and NAPIAP looks forward to increased cooperation with IPM programs, IR-4 and others, as well as with EPA, to enhance the overall quality of pest control strategies to support U.S. agricultural production.

Nancy Ragsdale, Director, NAPIAP, USDA;  
September 1, 1994.”

## ASIAN GYPSY MOTH BULLETIN BOARD IS OPEN FOR BUSINESS

If you have information to post to the bulletin board, send your message to:

agm-l@hal.aphis.ag.gov  
(FTS2000 syntax: Internet!hal.aphis.ag.gov!agm-l)

If you wish to subscribe, send the following message in the body, leaving the subject line blank:

subscribe AGM-L your name

to the following Internet address:

listserv@hal.aphis.ag.gov  
(FTS2000 syntax: Internet!hal.aphis.ag.gov!listserv)

You are encouraged to post any information you have available on Asian Gypsy Moth or other members of the *Lymantria* complex. There are no restrictions on the type of information, but the following are of particular interest: geographic range, population levels, occurrence of females at lights, interceptions on ships and open cargo, flight periods, behavior and host range/preference. All information will be unmoderated except that of a regulatory nature (i.e. ship lists).

For additional information:

CONTACT: VIC MASTRO (MA)

(508) 563-9303





## PESTICIDE USED CONTAINER COLLECTION NOW AVAILABLE IN MOST STATES

(From *Chemically Speaking*, December 1994, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida)

"Forty-four states will have programs in place for collecting used pesticide containers by the end of 1994. The number of states conducting programs to collect the high density polyethylene containers (HDPE) used for agricultural chemicals has grown from five original states to the current level in just the last five years."

"The Agricultural Container Research Council (ACRC) was formed in 1992 to develop state level collections of used pesticide containers, and to perform research into uses for the recovered containers. The volume of HDPE containers collected has grown from 80,000 pounds in 1989 to 2.5 million pounds in 1993. Four million pounds are projected to be collected in 1994. The volume of plastic used annually in crop protection chemical containers is approximately 21 million pounds."

"States that collect the most containers include Arkansas, California, Iowa, Mississippi, Missouri, and Texas. Once collected, the containers are ground into flakes and then transported to recyclers or approved storage sites. Because collection contractors will accept only those containers that have been certified as visually clean and properly rinsed, ARC has prepared materials to explain proper rinsing techniques. Video and literature information on rinsing/inspecting are available from the Pesticide Information Office."

"Besides collecting the HDPE containers, the council promotes end uses for the recycled containers. Some collected resin already is being used in the production of containers for dry pesticide products. ACRC also promotes the use of HDPE containers as an energy source. HDPE has a heat value, expressed in BTU's per pound, comparable to natural gas and higher than coal. Another advantage over coal is that HDPE is a cleaner burning energy source."

"ACRC is supporting container research including: 1) studies of the chemical residues left in the rinsed containers; 2) the production of plastic pallets to replace wooden pallets; 3) the possible use of HDPE in hazardous waste 'burn drums'; and 4) potential uses of the recovered materials as a middle layer, surrounded by virgin layers of material, in bottles. Chemical Regulation Reporter; October 28, 1994."



## IPM USED ON OVER HALF OF U.S. CROP ACREAGE

(From *Chemically Speaking*, December 1994, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida)

“The Economic Research Service of USDA has concluded in a recently released report that over half of the U.S. acreage in fruits, nuts, vegetable, and major field crops (corn, soybeans, and potatoes) are managed under IPM. To practice IPM, growers need to practice activities such as monitoring pest populations (scout) in their fields, use economic thresholds to make pesticide treatment decisions, rotate crops, employ field sanitation, and use mechanical cultivation. Many also employ a number of alternative practices such as beneficial organisms, pheromones, planting trap crops of pest resistant varieties, and adjusting planting locations and water use to manage pests.”

“The study also concluded that IPM acceptance will increase only if its economic benefits can be demonstrated. The report also noted that ‘survey responses show low adoption rates on some of the more sophisticated IPM techniques, such as release of beneficial organisms. Levels of adoption also vary widely between crops and regions. For example, IPM is more prevalent on grapes (54% of reported acres), oranges (64%), and almonds (54%). By comparison, pesticides are applied without economic thresholds (non-IPM) on 60-90% of berry, cherry and peach acres. Inadequate knowledge of available IPM alternatives, too few crop consultants to deliver IPM services, and the higher managerial inputs necessary for IPM implementation, are all impediments to adaption.”

“High-level IPM use (scouting, economic thresholds, and three or more additional practices) varies from 10% or less in a few crops (blackberries, lemons, temple oranges) to around 50% in nectarines and olives. High IPM use is more prevalent in crops where well-developed IPM programs exist, such as apples (27%), oranges (26%), and almonds (32%). No pesticides are applied on 20% or more of some fruit and nut crop acres, including kiwifruit, figs, avocados, apricots, and walnuts.’

USDA RTD Updates; August 1994

Pesticide and Toxic Chemical News; November 2, 1994.”

## GREEN GROUP’S REPORT GENERATES “UNWARRANTED FEARS”

(From *Chemically Speaking*, December 1994, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida)

“David Baker, director of Heidelberg College’s Water Quality Laboratory in Tiffin Ohio, has made a public statement concerning the Environmental Working Group’s (EWG) *Tap Water Blues* report. *Tap Water Blues* claims that 3.1 million people in the Midwestern states are exposed to a combined lifetime cancer risk from herbicides that exceed the federal guidelines by a factor of 10 or more.”





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AND TIMELY TIPS  
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## ALAMO AVAILABLE IN MICRO-INJECTORS

The fungicide Alamo® (propiconazole) was originally registered in 1990 in Texas under a Special Local Need (24-C) label for control of oak wilt, a vascular disease of oaks. The manufacturer, Ciba-Geigy, recently reformulated the product to make it more water-soluble, safer to use, and has obtained national registration for expanded use, notably: "prevention and treatment of (1) oak wilt (*Ceratocystis fagacearum*) of live oak, Northern red oak, and Northern pin oak trees and (2) Dutch elm disease (*Ceratocystis ulmi*) of American elm trees." The fungicide is injected under pressure into root flares at the base of individual trees using pressurized application equipment.

More recently, Ciba-Geigy has made the product available in new micro-injectors which can be easily inserted into root flares. A tap with hammer activates the plunger and begins to dispense the fungicide. This application method represents a closed system so that applicators never come into direct contact with the chemical.

For arborists who continue to use standard injection methods, Alamo® is also now being marketed in quart containers for large-scale pressurized injection projects.

CONTACT: DALE A. STARKEY (LA)

(318) 473-7293

## REPORT ON PESTICIDE ISSUES IN WEST AFRICA

(by Nancy Rappaport, Pacific Southwest Station)

The International PAN/ENDA-TM (Pesticide Action Network/Environnement et Developpement du Tiers Monde) Workshop on Pesticides and Sustainable Agriculture ("Atelier International PAN/ENDA: Pesticides et Agriculture Durable") was held in Bamako, Mali, from October 17 through 21, 1994. The meeting was extremely well organized, despite the fact that the phones were out at the conference center the entire week before the conference began, and all communications had to be made in person. Three interpreters provided simultaneous French/English translations of the proceedings; after a few early misfires, this system worked beautifully. The workshops were also conducted with interpreters, and the language differences were hardly noticeable.

Major themes included: (1) status of pesticide legislation in the Sahelian countries and problems arising from conflicting or nonexistent laws and regulations; (2) experiences with pesticide use and alternative methods of control in the Sahel and other regions; (3) integrated control and sustainable agriculture in East Africa, South Africa, Western Sahelian Africa, and Central Africa and the Guinea Coast. These presentations were followed by a series of workshops focused on assessing regulatory needs, developing sustainable methods, and developing a continental network of NGOs and PVOs knowledgeable in integrated control.

Accidental poisonings and misuse or abuse of pesticides (especially of pesticides banned in developed countries) was a recurring theme. Anyone making future contacts should be aware of the sensitivity of Africans to the issue of the dumping of banned pesticides on their market; it appears that the Americans have more credibility than the Europeans in this regard, in part because the Americans





currently working in Africa emphasize non-pesticidal approaches to pest control. Nearly every single African participant made reference to the high number of Africans, especially children, who have died because of exposure to these pesticides. The multitude of languages spoken in Africa (the number of ethnic groups and languages is mind-boggling) compounds the risk to Africans of pesticides, because there is small hope that the end-level user will be able to read the formulation, application, storage, and disposal instructions.

Results: The outcome of the workshop was, essentially, to charter a Pan-African IPM network to assist local communities in developing sustainable agriculture and agroforestry. It was not certain where the network would be centered, but it seems likely that it will be in Dakar, Senegal with Abou Tchiam (of ENDA and the University of Dakar).

CONTACT: NANCY RAPPAPORT (CA)

(510) 559-6470

### IMPACTS OF *BACILLUS THURINGIENSIS* ON RESIDENT BAT POPULATIONS - CARVER, OREGON

(by J. Mark Perkins and Josual R. Peterson)

“Abstract: A study was conducted to determine the effects of spraying *Bacillus thuringiensis* on resident bat populations. The spray site comprised 320 acres and was located on the south edge of Carver, Clackamas County, Oregon. Six sample sites were selected, three in the treatment area and three controls at least 0.5 mi. outside the treatment area. An attempt was made to select paired sites (one treatment, one control), based on vegetation, water, and land use. Differences in elevation were negligible (<100 ft). Sites were sampled twice before spray effects were likely to affect bats (April, May 1994), and three times post spray. Sampling was with ANABAT2 bat detectors, timers and recorders. We sampled for the first 1.5 hr. post sunset. Tapes were analyzed for total numbers of bat calls recorded and recorded calls were analyzed to determine bat species. Results indicate bat activity, as measured by the total number of bat calls recorded, was not significantly different for control versus treated area. Species identification suggests a negative bias against bats which are moth strategists (*Plecotus townsendii*, *Lasiurus cinereus*, *Myotis volans*) in the treated area. We feel that the treated areas are positively biased for *M. californicus* likely due to diminishing moth species diversity sites and lessening competition at the treated sites. Differences in mean numbers of species at control and treated sites were not significant. We found no evidence to suggest areas outside the spray acreage (control sites) were affected by the B.t. spray.”

CONTACT: J. MARK PERKINS (OR)

(503) 244-6613



## STARCH: A RENEWABLE TREATMENT FOR PESTICIDE CLOTHING

(Adapted from the *North Dakota Extension Service Pesticide Quarterly*)

Researchers have found that ordinary laundry starch on regular cotton clothing protects pesticide applicators from harmful chemicals. Starch is biodegradable, inexpensive, and familiar to most consumers. Starch provides a durable finish to cotton and cotton-polyester garments that traps pesticides, prevents their transfer to the skin, and allows moisture vapor to be transported away from the skin. The starch-bound chemicals are rinsed away in the wash. Remember to follow pesticide label directions for use of protective clothing and equipment. Wash all pesticide protective clothing separately from other laundry.

For further information on the specifics of this research:

CONTACT: ED MONNIG (MT)

(406) 329-3134

## SPECIAL REVIEW INITIATED ON TRIAZINE HERBICIDES

(From *U.S. Department of Agriculture, National Agricultural Pesticide Impact Assessment Program, Reregistration Notification Network*, Vol. 4, No. 12)

"The USEPA has initiated a Special Review on the triazine herbicides. The major uses of these herbicides include CORN, SORGHUM, and SUGARCANE; other uses include APPLES, AVOCADOS, BANANAS, BLUEBERRIES, CANEBERRIES, CHERRIES, CITRUS, CONIFERS, COTTON, CRANBERRIES, CURRANTS, GRAPES, LAWN and TURF GRASSES, GUAVA, NONCROP-LAND, NUTS, OLIVES, PEACHES, PEARS, PLUMS, and STRAWBERRIES. The USEPA has concluded that the triazines are possible human carcinogens and they may pose risks of concern through dietary and occupational exposure. The Special Review currently underway may result in a decision to continue, restrict, or cancel the pesticide uses in question. Written comments, data and information to influence this action should be sent to the Public Response Branch of EPA by mail or via internet <[docket-oppts@epamail.epa.gov](mailto:docket-oppts@epamail.epa.gov)> with mention of OPP-30000-60 by 3/23/95. For additional information contact:

Mr. Joseph E. Bailey  
EPA, Special Review Branch  
Phone 703-308-8173  
Fax 703-308-8041

Public Response Branch (7506C)  
EPA, Office of Pesticide Prog.  
401 M Street, SW  
Washington, DC 20460

(Source: Federal Register 59(225):60412-60443 11/23/94)"

CONTACT: DAVE THOMAS (DC)

(202) 205-1600





## **FLORIDA MEN SENTENCED TO JAIL IN FATAL WASTE-DUMPING CASE**

(From *Utah Pesticide and Toxic News*, Vol. XII, No. 11, November 1994, Cooperative Extension Service, Utah State University)

“Two Florida businessmen have been sentenced to 27 months in prison for illegally disposing of a hazardous chemical in a dumpster, which led to the deaths of two nine-year-old boys. The two men were convicted in July of violations of the Resource Conservation & Recovery Act. The company was illegally dumping toluene. An employee poured 5 to 7 gallons of toluene used for cleaning parts and machinery into an openly accessible dumpster outside the firm’s main production building. Two young boys who regularly played in an adjacent vacant lot died the day after inhaling lethal fumes while playing in the dumpster. The company will be sentenced separately on November 16 and faces up to \$1.5 million in fines. (C&EN, 10/24/94.”

CONTACT: HOWARD DEER (UT)

(801) 797-1600

## **LASER TECHNOLOGY INVESTIGATED FOR USE IN TRACKING MOVEMENT OF SPRAY CLOUDS**

Laser technology is being investigated to track the movement of spray clouds in the atmosphere. The potential utility of LIDARs (LIght Distance And Ranging) in this regard has been recognized since the 1960’s but recent advances in the field enable smaller, safer equipment with capabilities far beyond earlier instruments. Kirk Ducharme of the University of Connecticut working under Dave Miller spent time at Los Alamos National Laboratory to learn to use the LANL Mini-LIDAR and to obtain detailed engineering drawings and circuit diagrams of the instrument. This instrument allows a time history of cloud position to be recorded. There are still various problems to be worked out regarding the quantification and interpretation of the LIDAR data, as well as the logistics of deployment. However, the potential of this technology in answering some of the remaining questions regarding movement and drift of pesticide droplets is enormous. The engineering specs as prepared by Kirk Ducharme will be available in the form of a Missoula Technology & Development Center (MTDC) report.

CONTACT: HAROLD THISTLE (MT)

(406) 329-3981



## **ATMOSPHERIC STABILITY - A CRITICAL INFLUENCE ON SPRAY MOVEMENT**

It is known that the vertical temperature structure of the atmosphere (stability) is an important variable in the transport and dispersion of material released into the atmosphere such as droplets of pesticide. Recently published articles (Thistle et al., 1995a, 1995b.) indicate that the incorrect treatment of stability in calculating atmospheric dispersion can lead to misleading answers. The first article demonstrates the dependence of the nature of the spray plume (shape, concentration etc.) on stability. The study was done in an urban area where multiple obstacles (buildings) present an extremely difficult scenario to predict movement of spray. This was a tracer study using sulfur hexafluoride to simulate a dispersing gas or very small droplets and focused on the problem of 'downwash' which is the entrapment of a spray cloud in the lee of an obstacle and can lead to high concentrations near the surface where people might be exposed. The second article compares the collected data to the downwash model recommended by EPA and points out that, under low wind speed conditions, the models overpredict by a factor of 10 or more (>1000%!). Though this study focuses on an industrial scenario, the results are directly relevant to small droplets which are the focus of FPM drift mitigation work. MTDC/FPM will continue to investigate the effect of stability on pesticide drift with FSCBG drift model work.

CONTACT: HAROLD THISTLE (MT)

(406) 329-3981

## **1995 NATIONAL SILVICULTURE WORKSHOP SCHEDULED**

The biennial National Silviculture Workshop is scheduled for the week of May 8-11, 1995 in Mescalero, NM. The workshop will be hosted by Region 3 and the Rocky Mountain Station. The theme for the workshop is "Forest Health Through Silviculture." For additional information:

CONTACT: DENNIS MURPHY (DC)

(202) 205-1751

MARK DELFS (DC)

(202) 205-1162

NELSON LOFTUS (DC)

(202) 205-1548

## **GYPSES DEVELOPMENT MEETING HELD**

A meeting was held on December 5 and 6, 1994 to discuss improvements being made to the use of the Forest Service-Cramer-Barry-Grim (FSCBG) spray deposition model within GYPSES. Another meeting was held at Annapolis, MD, January 18 with our contractor to review progress. Thanks to the assistance of Jack Barry, FSCBG is becoming fully functional within GYPSES. Two new efforts will enhance its use in decision-support for predicting spray deposition, spray drift, and dose response predictions. Continued development of the stand damage model was discussed at the meetings. Stand damage allows impacts to be predicted and the economics of spraying to be addressed. Version 1.0 of GYPSES was released on January 1, 1995. For those who would like to provide comments please contact Dan.

CONTACT: DAN TWARDUS (WV)

(304) 285-1545





## 2 PLEAD GUILTY IN FIRST U.S. BUTTERFLY-POACH CASE

(From *The Sacramento Bee Final*, Friday, December 16, 1994)

"Butterflies aren't free. That's what prosecutors emphasized Thursday in the nation's first federal case against butterfly poachers. Richard J. Skalski of Redwood City and Marc L. Grinnell of Santa Rosa have pleaded guilty in U.S. District Court in San Jose to conspiracy to violate U.S. wildlife laws by netting 2,200 rare butterflies. They could face fines of \$250,000 and five-year prison terms, U.S. Attorney Michael Yamaguchi said. 'These people were purposely going into national parks and taking these things,' the prosecutor said. 'We're not talking about kids with their butterfly nets. They were selling and trading these species, many of which are on the verge of extinction.' Lee Altschuler, who heads the U.S. attorney's office in San Jose, said the prosecution is breaking new ground in the United States. 'It's a first for butterflies, and it's the first to allege a broad poaching scheme across federal lands set aside for conservation purposes,' he said. Skalski, who pleaded guilty Wednesday, and Grinnell, who entered his plea Dec. 7, confessed to taking the animals from wildlife refuges and national forests in 10 states, as well as Mexico and Germany. Among the U.S. sites were the Grand Canyon, Point Reyes National Seashore and Yosemite National Park. Collectors would pay hundreds of dollars for a pair of the rarer butterfly species, some protected by the Endangered Species Act and others by international convention. A third co-defendant, Thomas W. Kral, 30, of Tucson, Ariz., also charged with felony conspiracies, has a pretrial conference scheduled for Jan. 4. Kral, reached in Tucson, said: 'There's no way I'm pleading out. These two were in California, and I'm in Arizona. I won't say any more, but please attend the trial.' During a decade of plotting to net and sell the protected butterflies in federal lands, the men wrote letters to one another signed, 'Yours in crime' and 'Yours in poaching,' according to the U.S. attorney's office. Skalski, 39, a pest exterminator, and Grinnell, 40, a businessman, will be sentenced next year."

## EFFECTS OF SIMULATED FIELD DEPOSITS OF FORAY 48B ON GYPSY MOTH LARVAE

(By Steve Maczuga and Karl Mierzejewski)

"Summary - The susceptibility of second, third and fourth instars of the gypsy moth to undiluted Foray 48B was examined under laboratory conditions. Droplets of known size (100  $\mu$ m, 200  $\mu$ m, and 300  $\mu$ m) and density (1, 5 and 10 drops/cm<sup>2</sup>) of undiluted *Bacillus thuringiensis* var. *kurstaki* (Bt) were sprayed onto leaf disks of white oak and fed to gypsy moth larvae. Three parameters were tested; time required for mortality, leaf area consumed and change in larval weight. Droplet densities of 5 and 10/cm<sup>2</sup> were very effective (>90% mortality) against second and third instar larvae. Fourth instar larvae had high mortality rates at 5 and 10 droplets/cm<sup>2</sup> at the 200  $\mu$ m and 300  $\mu$ m droplet sizes. Low droplet densities (1/cm<sup>2</sup>) at 100  $\mu$ m were ineffective in controlling



a majority of third and fourth instar larvae. Surviving treated larvae had lower post-treatment weights than control larvae and exhibited weight loss during the experiment. As droplet density increased, larvae consumed less foliage. Foliage consumed by surviving treated larvae was between 2 and 6 times less than the amount consumed by control larvae.”

(Editor’s note - Such information will be used to develop bio-response modules for FSCBG)

CONTACT: STEVE MACZUGA OR KARL MIERZEJEWSKI (PA) (814) 863-4432

### **DYE MAY REPLACE MEDFLY PESTICIDE**

(From *The Sacramento Bee Final*, Saturday, December 17, 1994)

“A pink dye that is used to color Pepto-Bismol and lipstick kills Mediterranean fruit flies and shows early promise for eventually replacing the pesticide malathion in California’s costly and controversial war against the crop-destroying pest, federal researchers say.”

“Separate tests by two U.S. Department of Agriculture scientists found that Medflies in Hawaii and Mexican fruit flies in Texas died when exposed to light after feeding on low concentrations of the dye mixed with bait.”

“The findings from laboratory tests that began in the fall of 1993 are to be presented by entomologists Nicanor Liquido and Robert Mangan today at a meeting of the Entomological Society of America in Dallas.”

CONTACT: NICANOR LIQUIDO (HI)

(808) 959-4344

### **MONSANTO IS CLEARED TO MARKET HERBICIDE FOR USE AT LOW RATES**

(From *The Wall Street Journal*, Monday, December 19, 1994)

“Monsanto Co. said it received Environmental Protection Agency clearance to market its first herbicide designed to be applied at ultralow rates. The EPA’s approval, the chemical maker said, covers herbicides containing an active ingredient known as halosulfuron. It marks Monsanto’s first product from a class of herbicides ‘generally characterized by very low use rates, favorable toxicological profiles and low impact on the environment,’ the company said. Monsanto said halosulfuron can provide effective control of broadleaf weeds when applied at rates lower than one ounce per acre, compared with 1.5 to two pounds per acre for many current herbicides. The new herbicide is in line with an industry trend towards low-rate herbicides, which got under way more than a decade ago when DuPont Co. introduced the first of a series of potent herbicides based on a class of compounds known as sulfonylureas, or SUs. Halosulfuron is part of that broad chemical family of SUs, Monsanto said; its first halosulfuron products will be introduced in the 1995 spring planting season. Monsanto, maker of such big-selling herbicides as Lasso and Roundup, said it expects halosulfuron to become a ‘significant’ product in crops world-wide. By itself, the fact that an





agricultural chemical is strong enough to be used at super-low application rates doesn't necessarily imply any environmental bonus. But proponents say the new-generation herbicides are less toxic, break down more quickly, and can be stored and handled with less leakage."

### **"PLANT-PESTICIDES" ATTRACT ATTENTION OF EPA REGULATORS**

(From *Utah Pesticide and Toxic News*, Vol. XII, No. 12, December 1994, Cooperative Extension Service, Utah State University)

"EPA says it will regulate 'plant-pesticides' - certain novel pesticidal substances genetically introduced into plants to protect them against pests and diseases - just as it does other pesticide products under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and the Food, Drug and Cosmetic Act. Such substances can come from bacteria, insects, viruses, animals, or other plants. The agency says it will focus its attention on plant-pesticide uses that would lead to new exposures and/or have the greatest potential to cause adverse effects. EPA intends to exempt from regulation under FIFRA those plant-pesticides derived from closely related plants, such as those taken from one corn plant and engineered into another corn plant, and those that act primarily by affecting the plant they have been engineered into - for example, by producing a thicker layer of wax. EPA is also providing guidance to plant-pesticide developers on the kinds of information it will need to evaluate the substances. (C&EN, 11/28/94)"

CONTACT: HOWARD DEER (UT)

(801) 797-1600

### **DO PESTICIDES DECREASE LIFE EXPECTANCY?**

(From *Utah Pesticide and Toxic News*, Vol. XII, No. 12, December 1994, Cooperative Extension Service, Utah State University)

"In this century, synthetic pesticides have markedly decreased the cost of food and ensured that most of the food planted is eaten by people instead of insects. Daily intake of at least two fruit and three vegetable servings is recommended by the National Cancer Institute and the National Academy of Sciences. Only 9% of the American population, however, eats the recommended five fruit and vegetable servings per day. Consumption is even less elsewhere, especially among the economically disadvantaged of the world. Poorer people spend a bigger fraction of their resources on food than do wealthier people, eat less fruit and vegetables, and have a shorter life expectancy. (CT, 10/94)"

CONTACT: HOWARD DEER (UT)

(801) 797-1600



## EPA BIOPESTICIDES GROUP MOVES

The Biopesticides group at EPA has moved (that's Phil Hutton and Willie Nelson primarily). They are part of a new Division "Biopesticides and Pollution Prevention." They are now located at 2800 Crystal Drive, Crystal City, VA 22202; their mailing address is U.S. EPA, Biopesticides and Pollution Prevention Division, "persons name" 7501W, 401 M Street S.W., Washington, D.C. 20460.

CONTACT: PHIL HUTTON (VA)	(703) 308-8260
WILLIE NELSON (VA)	(703) 308-8682

### SURVEY RESPONSE TO "PESTICIDES IN THE DIETS OF INFANTS AND CHILDREN" REVEALS ONLY TRACES OF PESTICIDES IN HIGH-CONSUMPTION FOODS

(From *Resource - Engineering & Technology for a Sustainable World*, November 1994)

"To respond to the National Academy of Sciences study 'Pesticides in the Diets of Infants and Children,' U.S. regulatory authorities have joined together and produced a report defining various population groups' actual exposure to pesticides in foods. The study involved a 1992 collection of data from the Agriculture Department's Pesticide Data Program (PDP). PDP multi-agency participants include the USDA, EPA and the FDA."

"Overall, this new study revealed that only traces of pesticides are detected in high-consumption fruit and vegetable commodities. The report cited the fact that the vast majority of residues found were in orders of magnitude below what EPA has listed as safe in the tolerances."

"Fruit and vegetable samples were randomly collected from six states which represent about 40% of the U.S. population. The list of participating states include Florida, California, Michigan, New York, Texas and Washington. Samples were secured in a random, proportional fashion from terminal markets and food distribution centers. The produce samples originated in the six participating states, 31 other states and 16 foreign countries."

"The analysis portion of the study disclosed that, in general, the level of pesticide residues detected were substantially below tolerance levels. There were, however, some violative detections. Violative residues were detected in a total of 63 of the 5,750 overall samples, 15 of which were from imported commodities. Of the 63 detected violations, 10 exceeded tolerance levels; the other 53 have not had tolerance levels established. These violations were formally reported to the FDA for further enforcement action, and ultimately may assist the FDA in identifying areas where closer surveillance may be required."

"A total of 49 different pesticides were detected in about 60% of all the staples. Some samples contained residues of multiple pesticides. And, at least one detectable residue was found in more than 80% of the apples, celery, and peaches tested. More than 55% of all residues found were below 0.10 ppm, with 8.5% of the detections less than 0.01 ppm."





“This program also collected data in 1993, but results will not be ready for several months. (*ACCESS - Pesticides*, Cooperative Extension, The University of Arizona, Volume XIX Number 7, July 1994)”

## **TWO INFORMATIVE VIDEOS ABOUT NOXIOUS WEED IMPACT AND CONTROL**

*Explosion in Slow Motion: Weeds on Western Lands* - 17 minutes (\$10.00). The purpose of this video is to effectively and accurately communicate that public and private resources on Western lands are threatened by negative impact of noxious weeds and harmful, non-indigenous plants.

*Enhancing Resources through Integrated Management Systems* - 17 minutes (\$20.00). The objective of this video is to introduce landowners, land managers, and public interest groups to the concept of the “Integrated Management System.”

The videos can be ordered from:

Wyoming Weed & Pest Council  
P.O. Box 728  
Douglas, WY 82633

OR

Montana Weed Control Association  
P.O. Box 306  
Clancy, MT 59634

(BOTH VIDEOS, SPECIAL RATE, \$20). ADD \$3 FOR POSTAGE AND HANDLING FOR EACH VIDEO ORDERED.

CONTACT: GEORGE HITTLE (WY)

(307) 777-6585

## **COMPUTER TRACKS POLLUTION “HOT SPOTS”**

(From *Resource - Engineering & Technology for a Sustainable World*, November 1994).

“Pollution ‘hot spots’ and environmentally sound farming practices stand out with a new computer model that tracks the movement of pesticides and fertilizers as water flows over thousands of acres in a watershed. The model simulates water and chemical movement on a daily basis year round.”

“Each watershed is subdivided into grids so that areas with the highest chemical runoff can be pinpointed. Knowing the source enables state agencies to accurately recommend needed changes in farming practices.”

“The model called ANN-AGNPS for Annual-Agricultural Nonpoint Source pollution, also allows a comparison of farming practices to see which result in the least loss of chemicals to ground water, rivers and lakes. Earlier versions of the still-developing model are in use by the EPA.”



"The software has been requested by people ranging from government agencies and environmental consultants to lakeshore property owner associations in every state."

CONTACT: ROBERT A. YOUNG (MN)

(612) 589-3411

## BOTANICAL CROP PROTECTION AGENT WILL KILL NEMATODES

(From *Resource - Engineering & Technology for a Sustainable World*, November 1994).

"British Technology Group (BTG) has developed its first botanical crop protection agent, DMDP. This is the first botanical agent capable of killing nematodes, a worldwide pest. DMDP is derived from a Costa Rican tree, *Lonchocarpus costaricensis*, and is potentially far less toxic than synthetic materials used for the same purpose."

"BTG is working with INBio, a private Costa Rican biodiversity conservation institution, on testing the product and developing extraction processes for DMDP."

"In 1986, BTG identified botanically derived crop protection products as a significant commercial opportunity, due to increasing resistance to synthetic control of products in pests, fungi, and weeds. (*Journal of Soil and Water Conservation*, May-June 1994)"

## CALL FOR ARTICLES

Please forward to me by the 15th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of Short Subjects and Timely Tips. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

CONTACT: PAT SKYLER (CA)

(916)757-8343

FAX (916)757-8383

DG: P.SKYLER:R05H

E-MAIL:

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## PUBLICATIONS, REPORTS, AND PRESENTATIONS

Barry, J.W. 1994. Seventh report - National steering committee for management of western defoliators. FPM 95-2. USDA Forest Service, Forest Pest Management, Davis, CA.

Barry, J.W., M.E. Teske, and H.W. Thistle, Jr. 1995. New aerial herbicide application technology. Paper presented at the *16th annual forest vegetation management conference*. Sacramento, CA.

Liquido, N.J., J.P. Spencer, and R.T. Cunningham. 1994. Hydrolyzed protein bait sprays containing Phloxine B and Uranine for controlling Mediterranean fruit fly (*Diptera: Tephritidae*) infestations. USDA, ARS, Tropical Fruit & Vegetable Research Laboratory, Hilo, HI.

Liquido, N.J., G.T. McQuate, and R.T. Cunningham. 1994. Toxicity of Phloxine B and Uranine to Mediterranean fruit fly (*Diptera: Tephritidae*) adults. USDA, ARS, Tropical Fruit & Vegetable Research Laboratory, Hilo, HI.

MacNichol, A.Z. 1994. User manual for the spread factor database. FPM 94-14. Prepared under Contract No. 53-0343-1-00153 by Continuum Dynamics, Inc. for USDA Forest Service, Forest Pest Management, Davis, CA.

Maczuga, S. and K. Mierzejewski. 1994. Effects of simulated field deposits of Foray 48B on gypsy moth larvae. AATL 94-2. Pennsylvania State University, Aerial Application Technology Laboratory, Department of Entomology, State College, PA.

Smith, R.A. and J.W. Barry. 1995. Soil persistence of *Bacillus thuringiensis* following aerial application. Paper presented at the *Sixth annual gypsy moth research meeting*. Annapolis, MD.

Teske, M.E., T.B. Curbishley, and C-M.G. Lam. 1994. An examination of the nonwater evaporation algorithm in FSCBG. FPM 95-1. USDA Forest Service, Forest Pest Management, Davis, CA.

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The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.



“However, Dr. Baker has said that the heightened fears of unsafe drinking water generated by the EWG study are unwarranted. In fact, Dr. Baker declared that when the data is interpreted correctly, the report presents the ‘most convincing evidence yet’ that herbicides do not ‘pose a significant cancer risk.’ The group’s misrepresentation of its own study results has raised ‘unwarranted fears’ regarding the safety of drinking water in the Midwest.”

“According to Baker, the report’s data show that ‘in no state are herbicides responsible for even one additional cancer case per year’ in the sampled population assessed by EWG. EWG’s comments on risk levels were relative to ‘benchmark risks’ of one in a million. By calling these risks ‘unacceptable’ and saying that herbicides in water pose ‘very significant health threats,’ the EWG report ‘strikes fear’ into millions of Midwestern residents.”

“With scientific interpretation of the data, the report illustrates that the major use herbicides in question account for only ‘approximately 0.006% of the cancer cases that would occur for all causes.’ While it was agreed that ‘reducing herbicide exposure is a goal worthy of balancing against possible increased costs of food production, we do not believe that drastic measures or heightened fears of a herbicide-caused cancer epidemic are warranted by the data.’

Heidelberg College Press Release; October 18, 1994  
Pesticide and Toxic Chemical News; November 2, 1994.”

## NEW REFERENCE DOCUMENT ON IPM AVAILABLE

(From *Chemically Speaking*, December 1994, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida)

“A new reference document on IPM for people working in urban landscaping and turf management is available. *The Handbook of Integrated Pest Management for Turf and Ornamentals* was edited by Anne Leslie, an EPA employee. Chapters in the handbook cover the management of insects, weeds, and diseases in trees, shrubs, and turf around homes, golf courses, parks, highway rights-of-way, school grounds, and sod farms. Copies of the handbook are available for \$75 from Lewis Publishers, 2000 Corporate Boulevard N.W., Boca Raton, FL 33431; (800)272-7737.”





## CALL FOR ARTICLES

Please forward to me by the 15th of next month all articles, meeting announcements, publications, reports, or other items of interest that you would like included in the next issue of Short Subjects and Timely Tips. Please send them in the following format: Brief title and a summary or abstract that doesn't exceed one page in length. Please include the name, State, and telephone number of the individual who can be contacted for further information.

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## PUBLICATIONS, REPORTS, AND PRESENTATIONS

Anonymous. 1994. Auburn University Silvicultural Herbicide Cooperative 1994 annual report. Alabama Agricultural Experiment Station, School of Forestry, Auburn University, AL.

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The Washington Office, Forest Pest Management, Pesticide-Use Management and Coordination Group writes and distributes this informal newsletter as a means of providing current information to forestry pesticide users. Comments, questions, and items of input are welcome and may be sent to Pat Skyler, Editor, USDA Forest Service, 2121C Second Street, Davis, CA 95616; E-Mail to: /s=p.skyler/ou1=r05h@mhs-fswa.attmail.com or by DG to: P.Skyler:R05H. Reference to a commercial product or source in this newsletter does not constitute endorsement by the USDA Forest Service. Information should be verified by contacting the original source of information as neither the editor or the USDA Forest Service guarantees the accuracy of the information provided in this *Short Subjects*. Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or wildlife if they are not handled or applied properly. Use all pesticides in accordance with label precautions.

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